

ANNUAL REPORT
OF THE
INDIAN CENTRAL COTTON COMMITTEE,
BOMBAY,
FOR THE
YEAR ENDING 31st AUGUST
1937.

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SUB COMMITTEES

3 Most of the detailed work of the Committee is carried on through Sub Committees and this saves a considerable time and lightens the task of the Committee at its half yearly meetings. The Committee is greatly indebted to the members of the various Sub Committees for their invaluable assistance and willing co operation in furthering the work of the Committee more particularly are its thanks due to the members of the Standing Finance and Local Sub Committees who are required to attend to the business of the Committee at more frequent intervals.

The functions of the various Sub Committees are detailed below and their composition as on the 31st August 1937 is given in Appendix II

(a) *The Standing Finance Sub Committee* is a Statutory Sub Committee and is the principal executive body of the Committee. By a resolution of the Committee one of the members of this Sub Committee must be a representative of cotton growers. Seven meetings of this Sub Committee were held during the past year.

(b) *The Local Sub Committee* deals with all matters of a general nature, not involving finance, which cannot be postponed for consideration to the half yearly meetings of the full Committee. Six meetings of this Sub Committee were held during the year. A special meeting of this Sub Committee was held on the 13th March 1937 to meet Mr R. R. Saksena, Indian Government Trade Commissioner, Japan.

(c) *The Cotton Ginning and Pressing Factories Sub Committee* is appointed by statute to attend to matters arising out of the Cotton Ginning and Pressing Factories Act of 1925. This Sub Committee did not meet during the year under report. The more routine work of this Sub Committee was disposed of by the Local Sub Committee.

(d) *The Agricultural Research Sub Committee* ordinarily assembles half yearly during the meetings of the full Committee. It reports on the progress made on schemes financed by the Committee, examines proposals for new schemes or extensions of those already in operation and considers the reports of research students.

(e) *The Technological Research Sub Committee*, like the Agricultural Research Sub Committee, generally meets during the half yearly meetings of the full Committee and deals with all matters connected with the Technological Laboratory and technological research.

(f) *The Research Students Selection Sub Committee*, as its name implies, selects students to whom scholarships or training grants are awarded for the purpose of undergoing training in research in the several sciences relating to cotton. One meeting of this Sub Committee took place during the year.

(g) *The Cotton Forecast Improvement Sub Committee* usually meets half-yearly, its principal business being the improvement of the cotton forecasts of India

(h) *The Wider Markets Sub Committee* was appointed in 1933 with the object of examining the possibilities of finding wider markets for Indian cotton. It met twice during the year under report

(i) *The Standards Sub Committee* was constituted in April 1933, and is concerned with the preparation, for use in India, of universal standards of certain growths of cotton dealt with in common both by the East India Cotton Association, Bombay, and the Karachi Cotton Association and of certain other varieties with which only the former Association is concerned. Five meetings of this Sub Committee were held during the year

In addition to the above mentioned Standing Sub Committees, special Sub Committees are appointed from time to time to deal with specific matters which do not fall within the purview of any of the other Sub Committees. One such Sub Committee met on the 26th February 1937 to consider the policy to be adopted regarding the apportionment of the cost of schemes financed by the Committee during their extension period between Provincial Governments, Indian States and the Committee. Its recommendations as finally amended and approved by the Committee will be found in *Appendix III*

4. Whilst the Committee is representative of practically all sections of the cotton industry in India, it also enjoys the privilege of deputing representatives to serve on other bodies. Thus Sardar Rao Bahadur Bhimbhai Ranchodji Naik represents the Committee on the Imperial Council of Agricultural Research. Miran Nurullah, Mr M P Kolhe and Sardar Rao Bahadur Bhimbhai Ranchodji Naik represented the Committee on the Board of Directors of the Indian Central Cotton

The representatives of the Committee on the Board of Governors of the G C R Coleridge, Mr Kasturbhai Bahadur Sir Madhwarao Deshpande, Sardar Rao Bahadur Bhimbhai Ranchodji Naik, Mr I Vonesch, Miran Nurullah and the Secretary. The Committee is an Associate Member of the International Federation of Master Cotton Spinners' and Manufacturers' Associations

MEETINGS

5 The Indian Central Cotton Committee held two meetings during the year under review, both at Bombay. The first meeting took place on the 2nd and 3rd March 1937, and the following were among those who attended it by invitation —

Mr V C Steer Webster, Technical Adviser, Cutch State,
Mr F J D Eath, Port Commissioner, Veraval Junagadh State and
Mr S A S Quraeshi, Chief Customs Officer Nawanager State

The second meeting which was presided over by Mr N C Mehta, ICS, Offg Vice Chairman, Imperial Council of Agricultural Research, was held on the 9th and 10th August 1937. One of the visitors present was Mr E F G Gilmore, Offg Director, Industrial Research Bureau, Indian Stores Department.

In August 1935 the Committee resolved that a Conference of Scientific Research Workers on Cotton in India should be held once every three years to discuss cotton problems and in pursuance of this decision the first of such Conferences was held in Bombay on the 4th 5th and 6th March 1937. The Conference was presided over by Sir Bryce Burt, CIE, Offg Vice Chairman of the Imperial Council of Agricultural Research and President of the Committee on the first day, and by Dr W Burns, Offg Agricultural Expert, Imperial Council of Agricultural Research, on the second and third days. The proceedings of the Conference together with the scientific papers discussed have been printed as a separate publication of the Committee.

A list of the more important resolutions passed at the meetings of the Committee mentioned above and at the Conference of Scientific Research Workers on Cotton in India will be found in *Appendix IV*.

STAFF

6 Mr P H Rama Reddi continued as Secretary of the Committee till the afternoon of the 12th August 1937 from which date his services were terminated. He was succeeded by Mr P H Rama Reddi's current appointment as Secretary of the Government of Madras for appointment until the Government, Central Provinces and Berar, assumed charge as Secretary of the Committee.

Mr C J Bocarro held the post of Assistant Secretary throughout the year under report.

Dr Nazir Ahmad continued as Director of the Technological Laboratory and Mr R D Mhira as Publicity Officer throughout the year.

PROVINCIAL COTTON COMMITTEES

7 The value of Provincial Cotton Committees in dealing with problems of provincial importance has been stressed in previous reports, and once more the Committee records its view that where such Committees are actively functioning the work done by them has materially assisted the Committee in arriving at decisions on subjects referred to it. Local problems can be visualised best from various aspects by Provincial Committees and therefore the discussions and the decisions of such Committees help to bridge over difficulties which the absence of the knowledge of local conditions unavoidably creates. During the year under review, the Sind Cotton Committee met twice and the Punjab and the Central Provinces Cotton Committees each met once, and much useful work was transacted by them. During the year under report the Indore Government accepted the Committee's suggestion and appointed a representative Committee called "The Holkar State Cotton Committee" with the Finance Member of the State as Chairman. It is hoped that the coming years will witness a revival of the activities of Provincial Cotton Committees.

CHAPTER II.

WORK OF THE YEAR

COTTON POLICY.

The year under report saw the inauguration of a scheme for the extension of *Jarila* cotton, a medium staple wilt resistant strain, in the whole of the Khandesh tract where at present only the short staple type is grown and for which the demand is mainly confined to Japan. Work on the improvement of the Dholleras crop was also started this year. The *Mungari* cotton scheme sanctioned during the year has for its object the improvement of the short staple *Mungari* cotton grown in the medium staple Northern and Western tract of the Madras Presidency to eliminate the possibility of the short staple cotton being mixed with the superior cotton of the tract which is already protected by the Cotton Transport Act against the influx of inferior cotton from outside.

CENTRAL PROVINCES COTTON CONTROL ACT

The Central Cotton Committee endorsed the recommendation of the Central Provinces and Berar Government and a Bill prohibiting the cultivation of *Garrow Hill* cotton in the Central Provinces and Berar was passed by the Provincial Council in February 1935. The Act, known as the Central Provinces Cotton Control Act, came into force on the 1st April 1935. A copy of the Act will be found under it is now engaging the attention of the Provincial Government in Appendix I.

BOMBAY COTTON CONTROL ACT

10 The Bombay Cotton Control Act which was passed in November 1935 has for its object the prohibition of the cultivation, mixing or possession of *Goghari*, an inferior type of cotton which was rapidly spreading in the Surat tract and threatened to lower the reputation of 1027 A L F to the

detriment of the cotton growers of that tract. As a result of the application of the Act and the launching of a vigorous propaganda against *Goghari* by the Bombay Agricultural Department the cultivation of *Goghari* has been almost completely eliminated in the areas in which it was met with extensively in the past. In consequence Navsari cotton in the season under review realised Rs. 10 on Bardoli and Surat, a big contrast with past years when it

of the Cotton Control Act and the dangers of sowing *Goghari*.

BARODA COTTON CONTROL ACT.

11 It was observed in last year's report that the Bombay Cotton Control Act of 1935 was, by notification of the Baroda State, dated the 25th April 1936, applied to the State with certain modifications and omissions to meet the requirements of the State. During the year, propaganda was also carried on by the Baroda Agricultural Department by means of posters, handbills, meetings of farmers and conferences of leading *Kheduts* to secure the objects of the Act. Leaflets were also published explaining the purport and securing the inferior seed by the establishment. By this means 400 On the whole the Act is reported to have worked smoothly and well.

BHOPAL COTTON CONTROL BILL

12 During the year the Bhopal Durbar also introduced a Cotton Control Bill which follows the Bombay Cotton Control Act and has for its object the promotion of the cultivation of superior cottons by the prohibition of the growing of inferior cottons in the State. The Bill contains provision for its application to the whole State or to certain parts only by notification of the Durbar.

LANCASHIRE INDIAN COTTON COMMITTEE

13 The Committee once again expressed its appreciation of the work done by the Lancashire Indian Cotton Committee as detailed in its Annual Report for the year ending 31st December 1936. It was suggested in this connection that information should be obtained from the Lancashire Indian Cotton Committee regarding the percentage figures for Indian cotton consumed in Lancashire in comparison with the total quantity of cotton consumed from year to year, and also the proportions in which different varieties of Indian cottons were used.

To quote from the report, 'the imports of Indian cotton into the United Kingdom which ended on 31st July 1936, amounted to 5,267,000 lbs. which is higher than the most optimistic estimate of what might be possible of attainment three or four years ago. Indian cotton by the United Kingdom should have passed the half million bales' mark by such a satisfactory margin, of course, if certain adverse factors, as by far the most important, which this report will deal with, had not intervened. The year, which will be included in next year's statistics, show a further improvement and thus demonstrate that the success of 1936 is no mere 'flash in the pan'. An important part of the work of the Lancashire Indian Cotton Committee was that connected with technical investigations of Indian cottons, the object being to convince Lancashire spinners that Indian cotton could be processed with technical success for the demand they had to meet.

The following figures indicate the progress made in the use of Indian cotton in Great Britain —

Year (August 1st to July 31st)	Lancashire Indian Cotton Committee	Liverpool Cotton Association	Department of Commercial Intelligence and Statistics, Calcutta. <i>(Thousands of bales of 400 lbs)</i>	
	<i>Millions of lbs (Consumption)</i>	<i>Thousands of bales (1 running) (Imports into United Kingdom)</i>	<i>Exports to United Kingdom</i>	<i>*Total Exports to all countries</i>
1928 29	72	228	233	3,933
1929 30	73	201	286	3,868
1930 31	98	281	274	3,729
1931 32	72	137	128	1,592
1932 33	49	230	257	2,868
1933 34	92	362	367	3,270
1934 35	133	394	374	3,115
1935 36	150	547	533	3,826
1936 37	Figures not available	658	565	4,267†

* From 1931 32 exports from Kathiawar Ports are included

† Excludes exports from Burma.

COTTON TRANSPORT ACT

14
ment of I
Provinces

Govern
ables the
port, for

purposes of mixing and substitution, of inferior cotton into areas growing superior varieties. The extent of the application of the Act in those Provinces in which it has been introduced is detailed below —

Madras—During the year the southern limit of the Northern and Westerns area was shifted from Settigunta to Razampetta Railway Station, a distance of 37 miles in the interior. It is hoped that this extension of the distance over which cotton from the Northern and Westerns tract will have to be transported by road will help to stop the illicit movement of cotton into the Southern tract.

Bombay—The seven protected areas notified in the Bombay Presidency remained unchanged during the year under report. The question of amending the Bombay Notification under the Cotton Transport Act to enable half pressed bales from Vyara and some other stations in Baroda State territory to be imported into the corresponding Surat protected area in British territory without a license is now under the consideration of the Bombay Government. At present owing to a legal difficulty arising from the fact that the respective corresponding protected areas have been notified under different Cotton Transport Acts unrestricted transport of cotton between the protected areas concerned is not permissible.

Central Provinces—During the year the old district of Seoni was deleted from the protected area and the Narsinghpur sub-district, included in the protected area for transportation is prohibited except in the Bankheri division.

Indian States—The stations of Kaher, Vyara, Doswada and Fort Songhad on the Tapti Valley Railway were included during the year in the schedule of railway stations under the Baroda Cotton Transport Act.

There was no change in the protected area in the Hyderabad, Sangli, Rajpipla, Chhota Udepur, Baria and Lunawada States.

The Bhaderwa, Kadana, Sant, Sanjeli and Jambughoda States issued notifications during the year under review, declaring the portions of the Nerbudda Mahi protected zone lying within their respective territories to be a "protected area." There are no railway stations within the territories of these States.

The protected area in the Indore State remained unchanged. The Indian Central Cotton Committee. The recommendations are now under consideration.

COTTON GINNING AND PRESSING FACTORIES ACT

15 During the year under report several cases of infringement of the Act were brought to the notice of the authorities concerned. In some cases the press marks were put on the wrong side or they were indecipherable, in one case they were entirely absent. There were two instances in which the factory owners were fined Rs. 25 each, while in other minor cases they were warned.

Most of the cotton producing Indian States have fallen into line with British India in legislating for the marking of bales and the submission of weekly returns of cotton pressed. During the year, the Banada and Balasor States introduced similar legislation, thus bringing the total to 69. Out of these, weekly press returns were received from 64, the presses in the remaining States did not work during the season.

Amendment of the Act

Act. The Director of Agriculture further reported that some of the owners of the factories who were prosecuted under Section 9 (1)(b) of the Act were acquitted by the trying Magistrates on the ground that the said section, as at present worded, did not apply to factories constructed before the Act. The Legal Remembrancer advised that the object of the Act was to bring to factories constructed after the 1st January 1900, the Government so as to bring before the Commission for the cotton Government.

(b) As the result of a representation made by certain Bombay cotton pressing Byc Press without a nment l miti- been 18

LICENSING OF GINNING AND PRESSING FACTORIES

16 It is satisfactory to record that one of the first pieces of legislation advocated by the Committee almost from the time of its inception has at

the Government of India not
 nsing of ginning and pressing
 factories but to leave it to local Governments to do so if they desired.
 Provincial Governments were addressed and the three Provincial Govern-
 ments mentioned have passed the required legislation making it obligatory
 on all cotton ginning and pressing factories, situated in areas to
 which the Act may be applied, to take out licenses, and prohibiting
 the watering, mixing or admixture of cotton. These measures, when
 given effect to, will go a long way towards suppressing those malpractices
 which have militated against the interests of the cotton grower and have
 marred the reputation of Indian cotton both in India and abroad. The
 framing of the necessary rules before the Act can be applied in particular
 areas is at present under the consideration of the Provincial Governments
 concerned. The introduction of a similar legislation in the Punjab is also
 engaging the attention of the Punjab Government, the chief problem there
 being the mixing of cotton. Among the Indian States, Hyderabad has
 been a pioneer in the field of legislation of this type, the licensing of cotton
 ginning and pressing factories being in operation there from 1931.

MALPRACTICES.

17 Complaints regarding deliberate mixing of seed with lint in certain
 parts of Central India, at Kuksi in Dhar State, in Barwani and at Ujjain,
 Bankaner and Bag in Gwahor State were reported and the attention of the
 State authorities concerned was drawn to them. In most cases, the owners

Complaints regarding
 pur (Marwar State) and a
 Karachi Cotton Associati
 addressed in the matter warned the owners of the factories concerned

Bhavi in Jodhp-
 reported by the
 States who were

A cotton exporting firm in Bombay reported that cotton was being
 fraudulently packed at a mill in Khandwa, Central Provinces. The mill

the Director of Agriculture

* The Central Provinces Government have since enacted rules which were
 published finally in the Central Provinces and Berar Gazette of 29th October 1937
 (Appendix VI). The Central Provinces and Berar Government have also issued a
 Press Note bringing this fact to the notice of all the cotton g-
 factories owners in the province

The Karachi Cotton Association brought to the notice of the Committee for necessary action a tender in which certain bales were declared false packed. The cotton in these bales consisted of different varieties of superior and inferior cotton which were mixed and packed in such a way as to materially reduce the value of the bale. As the bales came from a factory in the Bikaner State, the State authorities were addressed and they issued a warning to the press owner concerned.

A complaint regarding seedy cotton at Raman in Patiala State was received through a Bombay firm and the East India Cotton Association. A report was made to the authorities concerned who warned the owner of the factory to be careful in future.

A firm in Karachi complained of false packed bales received by them from Maur in Patiala State. The matter was reported to the State authorities and the press owners were duly warned.

The attention of the Committee was drawn to a circular dated the 4th May 1935 issued by the Gwalior Durbar urging the owners of pressing factories to mark bales in such a way as to indicate clearly the kind of cotton contained in them and also whether the bale contained pure or mixed cotton,

valuing to Rs. 500
to increase rather
that the proposal

should be given a trial.

As a result of complaints received from the International Federation of Master Cotton Spinners' and Manufacturers' Associations about the presence of seeds in the bales, the Chairman has allowed, however, to increase rather than to decrease the price of bales, provided there are no complaints.

COTTON MARKETS

Except in the area of the Tiruppur Municipality in the Coimbatore district of the Madras Presidency, no regulated cotton market has been established anywhere in that Presidency under the Madras Commercial Crops Markets Act of 1933. The Provincial Government desire to have more experience of the working of the Act before extending the Tiruppur notified area or bringing other areas under the operation of the Act.

In the Central Provinces there were until recently only two regulated cotton markets, one at Warora and the other at Chanda. Five new markets under the Central Provinces Cotton Market Act have, however, been established since, viz., at Arvi, Pulgaon, Hinganghat and Wardha in the Wardha District and at Katol in the Nagpur District, proposals for the establishment of such markets at Harda and Timarni are under the consideration of the Provincial Government.

The Punjab Government, it is understood, are not likely to take up in the near future the question of the establishment of open regulated cotton markets.

In the Sangli State, a Huzur Order regulating the sale and purchase of commercial crops in the State is in force.

The framing of rules under the Baroda Agricultural Produce Markets Act is still under consideration.

In the Hyderabad State the markets at the following places are controlled under the Hyderabad Agricultural Markets Act —

Aurangabad, Jalna, Parthur, Hingoli, Sailu, Nanded, Umri, Latur, Raichur and Warangal.

At these places, the application of the Act has been extended not only to cotton but also to other important agricultural produce.

UNIVERSAL STANDARDS FOR INDIAN COTTONS IN INDIA

19 Prior to 1933, standards for Indian cotton were prepared by the East India Cotton Association and the Karachi Cotton Association. The latter Association prepared standards for *Bengals*, *Sind*, *Punjab American* and *Sind American* cottons, whilst the former had standards for other varieties as well. As the standards prepared by these two Associations in respect of the same varieties of cotton were different and resulted in a certain amount of competition between the two markets, the position was considered to be detrimental to the interests of the cotton trade and the Committee therefore took up the question of adopting standards which would be of universal application in India. Accordingly the East India Cotton Association and the Karachi Cotton Association, their respective Committees, and the Committee known as the Standards Sub Committee. This has now become one of the annual activities of the Committee. The Standards Sub Committee passed, during the year, universal standards applicable in India for the following varieties of cotton —

Kumbras, Oomras, Mathias, Broach and Dholleras. The universal standards for *Bengals*, *Sind*, *Punjab American* and *Sind American* were, however, not prepared during the year, as owing to unavoidable circumstances the Sub Committee could not meet for this purpose.

In accordance with the decision arrived at in 1935, the reference standards of the Committee which were stored in hermetically sealed zinc cases at Bangalore were compared with the duplicate sets stored at the Cotton Exchange, Sewri, under identical conditions and it was found that the standards from Bangalore were up to about half a grade better than the corresponding boxes kept at Sewri

The Karachi Cotton Association have accepted the Universal Standards of the Committee as the basis for their own standards, and, during the year under review, trading was done on that basis. The Standards Committee of the East India Cotton Association have recommended to the Board of Directors of the Association that the Universal Standards should be adopted as the basis for the preparation of the official standards of the Association subject to the reservation that the remaining standards should be prepared by the Standards Committee of the Association as heretofore

REPRESENTATION ON THE INTERNATIONAL FEDERATION OF MASTER COTTON SPINNERS AND MANUFACTURERS' ASSOCIATIONS

20 Mention was made in previous years' reports that in order to deal more effectively with complaints, arising abroad regarding faults, often of a minor nature in Indian cotton, which frequently received wide publicity through the publication of the proceedings of the bodies at which they were discussed, the Committee considered it desirable to obtain, if possible, representation on the International Federation of Master Cotton Spinners' and Manufacturers' Associations Manchester. An application was made
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UNITED PROVINCES COTTON PEST CONTROL ACT

21 During the year, the United Provinces Cotton Pest Control Bill to which reference was made in last year's report, was passed into law but it has not yet been put into force. The Rules to be framed under the Act have not yet finally received the approval of the Provincial Government

MEANS TO PREVENT THE INTRODUCTION OF FOREIGN COTTON PESTS

22 *The Mexican Boll weevil (Anthonomus grandis)*—The restrictions placed by the Government of India in 1925 on the import of American cotton into India with a view to prevent the introduction of the Mexican Boll weevil

The Red (Sudan) Boll worm (Diparopsis castanea) and other pests —

The entire prohibition of the import of foreign *kapas* (unginned cotton) under Government of India Notification No 897 Agri, dated the 24th July 1925, and the restrictions placed on the import of foreign cotton seed under Notification No 1213 Agri, dated the 27th May 1930, of the Government of India in the Department of Education, Health and Lands, continued to be in force. Under the 1930 Notification 14 parcels of cotton seed were received, examined and, where necessary, fumigated, during the year.

It may be mentioned that when the restrictions above referred to were introduced in British India in 1925, the co operation of maritime Indian States and foreign administrations was also sought. The Foreign Administrations and some of the maritime States agreed without reservation and took steps to prohibit the import of foreign cotton seed and *lapas* into their territories but certain Kathiawar States while expressing their agreement with the Government of India in principle prohibited the importation of foreign cotton seed and *lapas* from non Asiatic countries only on certain conditions. So long as the imports into Kathiawar States of Asiatic cotton seed or *lapas* were not excessive, the matter was not pursued further but recently, large quantities of cotton seed, apparently of Asiatic origin, were imported into one of

revival of the question
Kutch and Baroda State

mittee in March 1937 to discuss the matter and as a result of the mutual exchange of views the Kutch Durbar have agreed to prohibit the import of foreign cotton seed and *lapas* into the State. It is hoped that other maritime States in Kathiawar will also fall in line at no distant date.

COLLECTION AND SUPPLY OF INFORMATION

23 As usual, notes* on the progress in the Provinces and Indian States in the introduction of improved varieties of cotton and on the work of the Committee were supplied to the East India Cotton Association and the Karachi Cotton Association for publication. The weekly statements of purchases and arrivals of American cotton were published as usual for general information. The names of ginning and pressing factories in Indian States with the requisite details regarding press marks, name of owner or occupier, etc, were obtained and communicated to the Director General of Commercial Intelligence and Statistics, Calcutta, for publication in the *Indian Trade Journal* and for incorporation in the all India list of cotton ginning and pressing factories published by that Department.

PUBLICITY AND PROPAGANDA

24 The services of the Committee's Publicity and Propaganda Officer were again utilised during the year for bringing to the notice of the public

at large the activities of the Committee by means of Press *communiqués*, publications, pamphlets and posters and by participation in exhibitions and shows at which suitable exhibits were displayed and technological demonstrations given. The exhibitions in which the Committee participated during the year were — The United Provinces Industrial and Agricultural Ex-

under the
ustries and
ork of the
Committee the Publicity Officer of the Committee visited Lucknow, Cawnpore, Allahabad, Delhi and Poona

PUBLICATIONS

25 A number of important scientific and technical journals are received by the Committee partly by subscription and partly on an exchange basis. These are circulated among its research workers and by this means

The Committee desires to express its indebtedness to those institutions which have placed its name on their free mailing lists. Particular mention may be made of the British Cotton Industry Research Association for its Summary of Current Literature and the Shurley Institute Memoirs, and the Empire Cotton Growing Corporation, the British Cotton Growing Association and the East India Cotton Association for the supply of their publications for distribution to members. The Committee also records its thanks to the Indian Trade Commissioner, London, the USA Department of Agriculture, the Egyptian Ministry of Agriculture, Technical and Scientific Service, the Liverpool Cotton Association, the Lancashire Indian Cotton Committee, the Imperial Bureau of Plant Genetics, Cambridge, the Textile Institute, Manchester, the Imperial Institute, London, the Indian Statistical Institute, Calcutta, the National Institute of Sciences, Calcutta, the Academy of Sciences and other Associations and Chambers of Commerce for supplying it with reports, statistics and other valuable literature from time to time. The Committee is also on the free exchange list of the Imperial Council of Agricultural Research, the Imperial Institute of Agricultural Research, Delhi, and the Director General of Commercial Intelligence and Statistics, Calcutta.

SECRETARY'S TOURS

26 During the year under report, the following places were visited by the Secretary, in connection with the work of the Committee —

Indore, Calcutta, Rangamati, Dacca and Delhi

FINANCIAL

27 In *Appendix VIII* will be found a statement showing the Receipts and Expenditure of the Committee and also the Balance Sheet for the year ended March 31st, 1937 Receipts amounted to Rs 9,23,137-8 7 and expenditure to Rs 10,51,116-11-7

With the separation of Burma from India under the new constitution, the cess hitherto collected from that province is no more available to the Committee, this loss, however, will to some extent be compensated for by the fact that the Committee will no longer be called upon to sponsor cotton schemes in that province

CHAPTER III.

STATISTICS

28. In view of the important rôle that cotton plays in the national economy of India, considerable time and attention of the Committee are devoted to the improvement, preparation and publication of cotton statistics. The work done under this head during the year under report is briefly reviewed in the following paragraphs —

29 *Cotton Crop Estimates* — In order to ensure their simultaneous publication at Bombay and Calcutta, the estimates of the cotton crop were received by wire from the Director General of Commercial Intelligence and Statistics, Calcutta

During the year, the area under cotton in India (including Burma) decreased to 25,219,000 acres from 25,999,000 acres in the preceding year. This was mainly due to the reduction in the area sown with cotton in Hyderabad State and in parts of the Bombay Presidency, owing to unfavourable weather conditions. The highest ever recorded amounted to 100 lbs against 91 lbs in the preceding year

The higher yields per acre obtained in the past two years may be attributed to the improved cultivation and weather conditions. The higher yields are confined to the irrigated tracts

30 *Improvement of Cotton Forecasts* — With the sanctioning in 1934 of a scheme for the improvement of the cotton forecasts of the Bombay Presidency, the Government of India, a total cost of Rs. 28 lakhs

tion, and standard yield figures brought to light in the course of the inquiry are being examined and remedial measures adopted to rectify these as far as possible. The investigation has also shown that the standard yield for the last thirty British districts

One of the factors, which renders difficult the appraisement of the accuracy of Government cotton forecasts in India, is the lack of exact information regarding the quantity of *lapas* (seed cotton) and loose (ginned but unpressed) cotton consumed, chiefly in villages for such domestic purposes as hand spinning and the making of quilts, mattresses, cordage, etc. Such extra factory consumption has been conventionally estimated at 750,000 bales for the whole of India but the accuracy of this figure has been discredited frequently. To arrive at a more reliable estimate of the extra factory consumption, local enquiries were conducted in typical localities in different Provinces and States with the aid of funds provided by the Indian Central Cotton Committee and the material collected is now being examined.

The improvement of the cotton forecasts has been receiving the close attention of the Committee and every year a *post mortem* examination of the forecasts is conducted at the close of the year by a special Sub Committee of the Committee. This examination has brought to light several sources of error and has enabled remedial measures to be formulated. During the year under report the attention of the Punjab Government was drawn to the recurring under estimation of the Punjab cotton forecast and as a result, the question of revising the standard yield figures for the Punjab crop is being investigated by the Provincial Government. A source of under-estimation in the Bengal cotton forecasts was discovered and set right.

During the year the Committee decided to publish annually a report on the accuracy of the all India cotton forecasts of each season for general information. This decision was given effect to in Statistical Leaflet No 5, entitled "Report on the accuracy of the Cotton Forecasts of 1934-35 and 1935-36 seasons."

31 *Staple Length of the Indian Cotton Crop*—As usual, a report on the estimated production, during the season, of Indian cotton of different staple lengths was issued in May. The presentation in the report of trade estimates side by side with the Government estimates, was continued during the year. The Committee warmly acknowledges the assistance which it has received from the trade in this connection.

32 *Press Statistics*—Since 1925, weekly returns of cotton pressed in British India have been collected by Provincial authorities under the Indian Cotton Ginning and Pressing Factories Act, 1925, and forwarded to the Director General of Commercial Intelligence and Statistics for publication. To make the statistics more complete for the whole of India, the co operation of Indian States in compiling and supplying similar figures for the States was enlisted and it is gratifying to record that all the sixty nine States addressed have responded either by introducing legislation or passing the necessary executive orders. Press returns are being supplied by such States as have presses, including Gwalior State from which the returns are now being received regularly.

Reference was made in the previous year's report to the proposal to obtain figures of cotton pressed in Indian States in statistical bales of 400 lbs net, in addition to the running bale figures now being supplied. All the States addressed have expressed their willingness to furnish the necessary information with effect from the next cotton season.

During the season 1936 37, 4,457,031 bales were pressed in British India, including Burma, and 1,923,440 bales in Indian States, making a total of 6,380,471 bales for the whole of India, the corresponding figures for the preceding season being 4,321,262, 1,631,902 and 5,953,164, respectively.

33 Loose (unpressed) Cotton Statistics—The statistics of cotton pressed referred to in the preceding paragraph do not account for the whole of the Indian cotton crop, as, in addition to the cotton utilised for village or extra factory consumption, chiefly in the form of *kapas*, for which, as explained elsewhere, efforts are being made to obtain more reliable estimates, mills

are being collected under statute by an amendment of the form of return submitted by mills under the Indian Cotton Cess Act, 1923. Similar information is being supplied by Indian States voluntarily through the courtesy of the Durbars concerned. During the year 465,215 bales of loose cotton were consumed by mills in India. The relevant figures for 1926 27 to 1936 37 are shown in *Appendix IX* to this report.

34 Consumption—As in the past, figures for consumption of Indian cotton in mills in British India and Indian States were published monthly. The season's total consumption of Indian cotton in mills in India amounted to 2,631,296 bales of 400 lbs net, as against 2,677,688

According to the figures published by the International Federation of Master Cotton Spinners' and Manufacturers' Associations, the world's total mill consumption of Indian cotton, exclusive of Italy (for which figures are not available) showed an increase from 5,445,000 bales during the year ending 31st July 1936 to 5,948,000 bales during the corresponding period of 1936 37.

36. *Stocks* —By the co operation of Trade Associations and Market Committees, the response to the Committee's efforts in the matter of collection of figures of stocks of cotton held by the trade at the end of the season has been very encouraging. The information collected in respect of the stocks held on the 31st August 1937 is contained in *Appendix X*.

Though the season adopted for the cotton crop of the Madras Presidency is the year ending 31st January, the error in taking the 31st August as the last day of the cotton season for purposes of uniformity is not likely to be considerable in the case of the Madras cottons other than Tinnevelles, Salems and by the mills. Each year have been separately collected by the Director of Agriculture, Madras. As, however, this arrangement leaves a gap in the statistics of stocks of Northern, Western and Coconadas, for which also the season is taken to be the year ending 31st January. The relevant figures for the 31st January 1935, 1936 and 1937 are given in *Appendix X*.

37. *Demand for various types of Indian cotton* —Statistics of the export and Indian mill demand for the various types of Indian cotton are of con-

38. *Publication of "A Guide to Indian Cottons"* —The need for an authoritative publication dealing with the characteristics of Indian cotton had long been felt. This want was met in the year under review by the issue of the publication entitled "A Guide to Indian Cottons" as a result of the joint efforts of the East India Cotton Association and the Committee. The popularity of the Guide can be surmised from the fact that within a short time over a thousand copies were sold. Translations of the Guide in Gujarati, Marathi, Kanarese, Hindi and Urdu, for which it is believed there is a demand, will be published shortly.

39. *Publications* —The undermentioned statistical publications were issued during the year under report

1. *Statistical Leaflet No 1*, Fourth Issue (1936 37), "Report on the staple length of the Indian cotton crop of 1936 37 season"
2. *Statistical Leaflet No 2*, Third Issue (1935 36), "Stocks of Indian raw cotton held in India by the mills and the trade on 31st August 1936"

- 3 *Statistical Leaflet No 3*, Third Issue (1935 36), "Receipts at mills in India of raw cotton classified by varieties—1935 36 season"
 - 4 *Statistical Leaflet No 4*, Third Issue (1935 36), "Exports by sea of Indian raw cotton classified by varieties—1935 36 season"
 - 5 *Statistical Leaflet No 5*, First Issue (1934 36), "Report on the Accuracy of the All India Cotton Forecasts of 1934 35 and 1935 36 seasons"
 - 6 *Statistical Bulletin No 5* (1934 35), "Supply and distribution of the various types of Indian cotton during the season of 1934 35"
 - 7 *Statistical Bulletin No 6* (1935 36), "Supply and distribution of the various types of Indian cotton during the season of 1935 36"
 - 8 *A Guide to Indian Cottons*—a joint publication of the East India Cotton Association and the Indian Central Cotton Committee
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CHAPTER IV

RESEARCH.

40 The research policy of the Committee is carried out in two ways, atunga, Bombay, in Provinces and an all India im- The Committee, to the Institute al economic and agricultural importance are under investigation. The problems of research in Provinces and States include several schemes—botanical for breeding high yielding superior types of cotton, entomological for the study of the life-history of certain cotton pests and measures to combat them, mycological for ascertaining ways and means to prevent loss due to wilt and root rot and phys The tive of cotton and the maintenance of nuclei of pure seed of approved varieties of cotton. It has, in addition, undertaken jointly with the Imperial Council schemes and two schemes for the maintenance of nuclei of pure seed of approved varieties of cotton at a total estimated cost of Rs 6,20,764. In addition, the Technological Laboratory, idore, and the economic inquiry pane and their rotation crops are first thoroughly examined by Special Sub Committees consisting of the expert members of the Committee and others specially co opted because of their scientific qualifications.

A close touch is maintained with the work being done under the various schemes by means of progress reports and programmes of work which those in charge of schemes are required to furnish annually.

TECHNOLOGICAL LABORATORY.

41 In the past the Annual Report of the Director, Technological Laboratory, formed part of this report, but from this year it will be issued

as a separate publication of the Committee, covering the period 1st June to 31st May. The Annual Report for the year ending 31st May 1937 has already been published.

During the year covered by this report, the resources of the Technological Laboratory continued to be availed of, as in the past, by the agricultural officers for assessing the spinning value of their new strains; mills also

Samples are tested at the Laboratory under the following groups.—
(a) agricultural samples, (b) samples of standard Indian cottons, (c) trade

cottons were published a few months ago. The samples tested fall under the following categories:—
Association of
of Indian cotton
plied under

Associations and which represent the early arrivals of the various Indian cottons into the local markets. Altogether 30 samples of the first category and 22 of the second were tested.

Cotton Committee. During the period under review, 6 such samples were

(b) after they were compared with the standard of finding out the extent of the actual and nominal differences lay within permissible limits, (3) a sample of cotton grown in Afghanistan sent by a firm and tested for the first time at the Laboratory

(d) Technological samples comprise those samples of cotton which are tested at the Laboratory in connection with certain research problems. Investiga-

of a cotton

Side by side with the work of the Spinning Laboratory numerous research problems are being investigated in the Fibre Testing, Physics, Chemistry and Moisture Testing Sections of the Laboratory.

A new scale of fees for tests carried out at the Technological Laboratory was fixed during the year

INSTITUTE OF PLANT INDUSTRY, INDORE.

42 The Annual Progress Report of the Director, Institute of Plant Industry, Indore, for the year ended 30th June 1937 is reproduced in Appendix XIII of this report. The primary object of the Committee in financing the Institute, which was established in 1924, was to provide a central research station for cotton in the black soil area of the Malwa Plateau. The programme of of Indian cottons, nected with the cu

The Institute is maintained by annual contributions from the Committee on the one hand and the Member States on the other and representation on the one financial year is proportionate to the previous financial year. During the year 1936-37 the contribution of the Committee to the Institute amounted to Rs 1,11,000 against Rs 51,000 of the Member States, and accordingly the Committee was represented on the Governing Body by nine members against five representing the States.

GRANTS-IN-AID

SCHEMES IN PROGRESS IN PROVINCES AND STATES

MADRAS.

43 *Herbaceum Scheme*—This is one of the earliest schemes sanctioned by the Committee in 1923 and its original object was to secure a suitable *Uppam* (*G. herbaceum*) strain which would spin above 20s to replace *Karunganni* (*G. indicum*) in the "Salems" and "Tinnevelles" tracts where, due to low and precarious rainfall, *Uppam*, a more hardy variety than *Karunganni*, gives better yield than the latter in adverse seasons, though the reverse is the case in years of good rainfall. The difficulty of obtaining suita-

as a separate publication of the Committee, covering the period 1st June to 31st May. The Annual Report for the year ending 31st May 1937 has already been published.

During the year covered by this report, the resources of the Technological Laboratory

samples are tested at the Laboratory under the following groups —

standard cottons mostly represent the improved varieties grown on a commercial

Umri Bani, Sind Sudhar and 1027 A L F The results of the tests on these cottons were published in the Annual Report for 1936-37.

tested for
Associat

of India
plied under arrangement with the Bombay and Ahmedabad Millowners' Associations and which represent the early arrivals of the various Indian cottons into the local markets. Altogether 30 samples of the first category and 23 of the second were tested during the year and the results published in 2 or 3 parts.

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sent by the East India Cotton Association to help the Appeal Committee of the Association to check up their decision on these cottons, (2) 21 bundles of yarns of different counts sent by the Bombay Millowners' Association for the determination of their actual counts (a) at the prevailing humidity, and (b) after they were completely dried in a conditioning oven, with the object of finding out the extent of malpractice in the matter of differences between the actual and nominal counts and of ascertaining whether or not these differences lay within permissible limits, (3) a sample of cotton grown in Afghanistan sent by a firm and tested for the first time at the Laboratory

On the bio chemical side the investigations showed that gum formation in the attacked plants was due to the bacterial activity associated with the carbohydrate make up of the plant. This phenomenon of gum formation has brought out clearly the importance of affording protection against *Pemphres* attack.

The botanical work was confined to the testing of a number of varieties of cottons resistant to the *Pemphres* attack. Out of several varieties tested, only four, viz, *Quebradinho*, *Verdao*, *Moco* and *Bourbon* suffered low mortality from the pest. Local varieties except *Nadam* suffered more. These varieties, however, are late maturing and poor in yield compared with the early maturing varieties. The year's tests showed that the local varieties suffered a higher percentage of damage than the early maturing types recorded very low percentages.

The data of the last season on the evolution of a strain in *Karunganni* cotton indicated that shedding response to rains depended on the stage of plant growth at the time of rainfall and that there seemed to exist a critical period for each selection. Four separate waterings at fortnightly intervals were accordingly tried to study the relative responses of the strains at every watering. The best four performers of the last year's trials and sixteen fresh selections chosen from the progeny row tests on the basis of yield were grown in randomised plots replicated four times. In each type and treatment, one row of plants was fitted with a trough of hessian cloth to collect shed forms. The results showed that 8 cultures and the control were not harmed by any of the 4 waterings, and of these, three cultures showed distinct improvement in yield after the supply of water. On scrutiny of the shedding records, it was noticed that the average shedding curve was little affected by the waterings. Another set of 15 cultures were examined and the analysis of their yields did not show any superiority over the control.

With a view to finding if mixing other crops with cotton would improve retention of bolls, 20 plants in each of the treatments of the mixed cropping experiment conducted under the Madras Fodder Cholam Scheme were studied in detail with regard to number of buds, flowers and bolls produced and it was observed that cotton sown thick was the best treatment for boll retention.

45. *Fodder Cholam Scheme*—This scheme was started in 1931 to

cotton for the Nerbudda Mahu zone with wilt resistant, heavy yielding, *Goghari* types to replace the local mixture consisting of a rough and short staple variety, susceptible to wilt and low ginning outturn. With this specific aim in view, a highly wilt resistant and high spinning strain, *B D 8*, was crossed with mostly high ginning but poor staple quality *Goghari* types. In view, however, of the Committee's policy to replace, wherever possible, short staple cotton with medium or long staple cotton efforts are now concentrated on wilt resistance, heavy yield and fibre length. Originally, a highly wilt resistant and good spinning strain of *B D 8* was crossed with high ginning but poor staple quality *Goghari* types but subsequently, as a result of the change in policy, some of the crosses were rejected and fresh crosses of *B D 8* with other types superior to *Goghari* in staple quality were made, while most of the remaining crosses were back crossed with *B D 8*, with a view to increase the scope of selection for fibre properties. During the year under review, there were under trial 15 crosses in all (5 straight, 8 back and 2 composite) in different generations. Two of these, viz., *B D 8* × *G A 26 F6*, and the back-cross, *B D 8* × (*B D 8* × *G A 26 F1*) *F4* yielded several segregates of fair promise. Fourteen progenies of segregate 76 of *B D 8* × *G A 26*, tested during the year, have given fairly stable performance, though there is some variation amongst them. All are superior to *B D 8* in ginning, while 6 are equal to, and 1 slightly better than *B D 8* in fibre length.

In the back-cross *B D 8* × (*B D 8* × *G A 26 F1*) *F4*, three segregates were tried during the season with 10, 8 and 8 progenies and in all 8 best progenies from the 3 segregates have been selected for purity tests.

Selection in the local has yielded only two selections of some importance. New selection 12, a *B D 8* type, is maintained as a better spinning quality but is lodged badly during rain.

48 *Jalgaon Cotton Breeding Scheme*—This scheme, like the Broach Scheme, commenced in April 1932, with a view to secure, by unit selection or hybridisation, suitable wilt resistant types with heavy yielding, high ginning and good spinning qualities and to replace local *N R* and *Banilla* in Khandesh. *Banilla*, though superior to local *N R* in ginning outturn, spinning qualities and yield, is susceptible to wilt and has deteriorated in spinning quality, since it was first introduced. The three selections *N V 57-7*, *N V 56 3* and *N V 56 17*, which were reported as promising in previous years, have again maintained their superiority over *Banilla*, *N R 6* and local *N R*. *N V 56 3* or *Jarila* for which a seed distribution scheme has been sanctioned by the Committee has proved its superiority in yield over selections *N V 56 17* and *N V 57-7* and even over local cotton in some localities. This strain is being tested at Poona with a view to isolating a few completely wilt free types. This strain spins up to 40's against 41's

SIND

54 *The Sind Physiological Scheme* was started in July 1927 with the object of ascertaining the optimum sowing time and irrigation and manurial requirements of cotton so that the Department of Agriculture might be in a position to advise the cultivator authoritatively on these points by the time the Sukkur Barrage was opened. In 1932 it was definitely concluded

that in are the watering ions of 3" orval and her yield n of 8" or any other method of irrigation practicable under the barrage conditions. This work has now reached a stage when definite recommendations can be made to the cultivators

The manurial experiments have proved that the application of manure to cotton is profitable in Sind and that satisfactory returns can be expected from the application of compost alone at the rate of 15 cartloads per acre before sowing or compost at the rate of 7½ cartloads per acre before the basal application of compost. The results obtained have been found to be statistically significant and no further work appears to be needed on these experiments. The scheme closed down during the year under report

PUNJAB

55 *The Botanical Scheme* was started in 1925 with the object of investigating the causes of the periodic failures of American cotton in the Canal

under different conditions of soil and climate, 43F, the best of the new American types, was finally selected for general distribution in place of 4F. During the year under review 43F continued to maintain its popularity with the cultivator and the trade alike and occupied an area of 25,000 acres against 2,000 acres in 1934-35. It is expected to cover 70,000 acres in 1937-38 season

47F, a promising new strain of American cotton, appears to be even superior to 43F. much alike to occupy 10,000 acres. It has not yet been officially issued for general cultivation.

Of the *Desi* varieties, 39 *Mollisons*, the distribution of which was started in 1934-35, has made very rapid progress during the past two years and is expected to cover a large part of the area in the Canal Colonies.

Jubilee cotton, a new strain, 39 *Mollisons*. Although it has made headway without the help of the Government, it lies in the quality of its lint which is very similar to that of 4F cotton.

A large number of pure line and hybrid strains were also under trial and some of them have appeared to be very promising.

A new date and so far, the night of May, and the sowing results obtained the second fortnight.

56 *Physiological Schemes* in the Punjab occurred in the The external symptoms of the reddening and shedding of the leaves, premature opening of the bolls with immature seeds with low quality of lint and in extreme cases the dwarfing of the plant. To account for these failures various views were advanced like the heat stroke theory of Milne (1924), attack of white fly (Roberts, 1929) and unfavourable combination of climatic and biotic factors by Troughton. The malnutrition of the plant is the main cause of the failure. The following are the main arching.

From the review of the work done on the problem and from the symptoms exhibited by plants during the failure years, it was first investigated whether the failure of the cotton plant was caused by the deficiency of any important mineral in the Punjab soils. In the first year, therefore, the following two lines of investigations were undertaken.—

- (a) The effect of additions of minerals like iron, magnesium, and manganese on the growth and yield of the cotton plant was studied.

SIN

54 The Sind Physiological Scheme was started in July 1927 with the
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irrigation experiments have shown that water requirements of cotton are the best 1 inch the day and night. -ods and that an initial watering session by two irrigations of 3" each at 15 days' interval and are irrigated 3" each at 10 days' interval gives decidedly higher yield than the local method of 4" every 20 days after the initial irrigation of 8" or any other method of irrigation practicable under the barrage conditions. This work has now reached a stage when definite recommendations can be made to the cultivators.

PUNJAB

55 *The Botanical Scheme*
gating the causes of the period
Colonies and obtaining suitable
the 4F and *Desi* cottons, respec
economic value of the improved types of cotton work is being concentrated
on the problem of breeding and a separate physiological scheme has been
sanctioned for the investigation of the problem of periodic failures of American
cotton. In previous reports it was stated that after extensive trials
under different conditions of soil and climate, 43F, the best of the new
American types, was finally selected for general distribution in place of 4F.
During the year under review 43F continued to maintain its popularity with
the cultivator and the trade alike and occupied an area of 25,000 acres against
2,000 acres in 1934-35. It is expected to cover 70,000 acres in 1937-38
season.

47F, a promising new strain of American cotton, appears to be even superior to 43F in spinning qualities, while in other respects the two are very much alike. The area under this cotton is steadily increasing and is expected to occupy 10,000 acres in 1937-38, even without the assistance of the Agricultural Department. It has not yet been officially issued for general cultivation.

Of the *Desi* varieties, 39 *Mollisoni*, the distribution of which was started in 1934-35, has made very rapid progress during the past two years and is expected to cover a large part of the area in the Canal Colonies.

Jubilee cotton, a new *Desi* cotton, seems to be even more promising than 39 *Mollisoni*. Although still in the experimental stage, it is making rapid headway without the help of the Agricultural Department, its chief merit lies in the quality of its lint which is very similar to that of 4F cotton.

A large number of pure line and hybrid strains were also under trial and some of them have appeared to be very promising.

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56 *Physiological Scheme* — Partial failures of the American cotton crop in the Punjab occurred in the years 1919 to 1921, 1926 to 1928, 1931 and 1932. The external symptoms of the cotton plants during these failures were early reddening and shedding of the leaves, premature opening of the bolls with immature seeds with low quality of lint and in extreme cases the dwarfing of the plant. To account for these failures various views were advanced like the heat stroke theory of Milne (1924), attack of white fly (Roberts, 1929) and unfavourable combination of climatic and biotic factors by Trought (1931), as these theories could not be supported with sufficient scientific data, it was thought that these failures were due to the malnutrition of the plant. The nature of the nutritional disorder and the causes underlying it.

From the review of the work done on the problem and from the symptoms exhibited by plants during the failure years, it was first investigated whether the failure of the cotton plant was caused by the deficiency of any important mineral in the Punjab soils. In the first year, therefore, the following two lines of investigations were undertaken —

- (a) The effect of additions of minerals like iron, magnesium, and manganese on the growth and yield of the cotton plant was studied.

SIND

51 *The Sind Physiological Scheme* was started in July 1927 with the object of ascertaining the optimum sowing time and irrigation and manurial requirements of cotton so that the Department of Agriculture might be in a position to advise the cultivator authoritatively on these points by the time the Sukkur Barrage was opened. In 1932 it was definitely concluded that the best method of irrigation is to give an initial watering of 8" during the first 28 days followed in succession by two irrigations of 3" each at interval of 20 days, 3 irrigations of 3" each at 15 days' interval and five irrigations of 3" each at 10 days' interval gives decidedly higher yield than the local method of 4" every 20 days after the initial irrigation of 8" or any other method of irrigation practicable under the barrage conditions. This work has now reached a stage when definite recommendations can be made to the cultivators.

The manurial experiments have proved that the application of manure to cotton is profitable in Sind and that satisfactory returns can be expected from the application of compost alone at the rate of 15 cartloads per acre before sowing or compost at the rate of 7½ cartloads per acre before sowing followed by ammonium sulphate at the rate of 50 to 100 lbs per acre 1½ months to 3½ months after sowing. Best yields are obtained when the quantity of ammonium sulphate is increased to 200 lbs in addition to the 15 cartloads of compost. The best time for sowing is in the first week of May. The best variety is the 4F.

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PUNJAB

55 *The Botanical Scheme* was started in 1925 with the object of investigating the causes of the periodic failures of American cotton in the Canal Colonies and obtaining suitable types of American and *Desi* cotton to replace the 4F and *Desi* cottons, respectively. In view, however, of the immediate economic value of the improved types of cotton work is being concentrated on the problem of the periodic failures of American cotton. A biological scheme has been sanctioned for the purpose of investigating the causes of the periodic failures of American cotton. In the first year under review 43F continued to maintain its popularity with the cultivator and the trade alike and occupied an area of 25,000 acres against 2,000 acres in 1934-35. It is expected to cover 70,000 acres in 1937-38 season.

native hosts in the no cotton season go some way towards reducing the extent of the attack. Proper manuring at the right time may help the plants to recover from the damage caused by the fly.

above, rosin compound, proved to be the best. From the machines tested, cart sprayers proved useful as their working was very easy and economical. Hardie sprayer with a 2 h.p. motor pump gave very satisfactory results both with regard to the mortality of the pest and the cost of spraying. Cart sprayers, however, can only be worked when the crop is young. Orchard Power sprayer, though it gave the highest percentage of mortality, was found cumbersome and uneconomical.

The cost of spraying with rosin compound amounted to Rs 1-12 4 per acre with the Sapom, Rs 1-7-8 with the Hardie and Rs 2 9 9 with the Orchard Power sprayer during 1934. It is possible, however, to reduce the cost still further by more economical methods. Spraying *Desi* cottons during the month of July and American cotton during August increased the yield. It was determined that spraying must be done before flowers appear.

59 *Root Rot Scheme*—This scheme commenced in 1932 for the investigation of root rot in the Punjab, where, particularly in the canal irrigated areas, the annual damage done to cotton by this disease is estimated at Rs 16 lakhs. The damage caused by the disease in the crop is 6 to 8 per cent. Rain-fed cottons, however, are not affected and the activity of the disease increases in proportion to the amount of irrigation or soil moisture. The work of the year shows that organisms *Rizoctonia bataticola* and *Rizoctonia solani* are most active in June and July and do maximum damage to the May sown crop. These organisms are present on the roots and are carried over from year to year in live as well as decayed roots unlike American root rot fungus which lives only in live roots.

None of the varieties so far tested, viz., *L S S*, 43F, 45F, 4F, *Mollison*, 15 and *Jubilee* cotton, are resistant to the disease, and attempts are being made to select resistant types from the local crop of American and *Desi* cotton. The application of fertilisers has not given any encouraging results and the chemical analysis of the infected and uninfected soils shows no difference except in CaO/MgO ratio which is higher in the latter than in the former.

60 *Scheme for Defibrating and Delinting Plant*—This scheme was sanctioned in August 1933 and the two machines were installed in 1934 at the British Cotton Growing Association's ginning factory at Khanewal. Due to some defect in it, the defibrating machine could not be set right. From the results obtained on this machine at the British Oil and Cake Mills, Rochester,

to which 50 tons of 289F seed were shipped by the suppliers of the machine, it appears that this variety of seed can be successfully defibrated but the Rochester report shows that the variation in the size of the seeds is the fundamental cause of the trouble and defects experienced. The removal of this defect is not an easy matter and the variation in the size of the seeds must be accepted as a normal factor. Another point brought out in the report is that the seed is very poor in quality and the grade of defibrated seed can be sold in the market only at a big discount and the grade of the fuzz is so low that it is unfit for sale.

With regard to tests carried on with the delinting machine, delinting and 7.5 per cent of linters and with high polish 0.58 maunds of seed per hour and 8.7 per cent of linters of the delinting machine outlay, depreciation and leads to an apparent loss of Re 0.21 and high delinting.

As the results have not been of any economic value, the scheme has since been closed down.

CENTRAL PROVINCES

61. *The Botanical Scheme* is one of the earliest schemes of the Committee and was commenced in 1923. The main work under this scheme is concerned with the breeding of new strains of cotton suitable to the conditions obtaining in the various cotton growing areas of the provinces and especially capable of resisting the handicaps imposed by wilt and other diseases. In addition, only such other crops are worked at, as experience has shown to be suitable rotation crops for making the growing of cotton a permanent success. As the Department of Agriculture had already done some work on cotton breeding prior to the starting of this scheme, it was possible to produce, earlier than otherwise, wilt-resistant strain known as *Verum 262*, which seemed to be admirably suited to the requirements of the moment. It was, however, soon found that this strain was susceptible to adverse climatic conditions and attention was, therefore, directed to the breeding of new strains free from this defect and, if possible, with better economic characters. These objects have, to a very large extent, been achieved, and it is now only a matter of a few years before *Verum 262* is

at the cut - thus, promise and superior in lint.

The production of medium or long stapled cottons that would spin higher counts than 20s is being aimed at in the Central Provinces in accordance with the policy approved by the Indian Central Cotton Committee and the Agricultural Department to replace at least the greater proportion of the existing coarse cottons by varieties that can compete in the world market.

The chief activity during the year was concerned with the testing, multiplication and expansion of the newly developed strain, V 434. But while the progress in expansion of this strain was watched in the field, breeding work, with the object of producing still better varieties, was steadily pursued in other cottons. There were some 20 000 acres under V 434 during the year and once again it proved to be the best all round strain, with remarkable adaptability to varying climatic conditions. Another characteristic revealed by this strain was the tenacity of its burst bolls to withstand heavy rain and gale without dropping on the ground like the coarser varieties. In spinning capacity, this strain maintained practically the same performance as during the past four years. A representative sample of it was, as usual, sent to the Technological Laboratory, Matunga, along with other approved cottons. Amongst these V 434 gave the best spinning performance, *Late Verum* following close behind. From its yarn strength and weight of 586

during the growing season, must be considered very satisfactory. The yields during the previous three years were 589, 635 and 475 lbs respectively. The area under V 434 in the coming season is expected to be in the neighbourhood of 200 000 acres.

Late Verum was again tested in areas for which it has been specially developed and the results obtained were in keeping with those of the previous years. But owing to the all round suitability of V 434 and the advantage of having as few types as possible under cultivation in adjacent areas, it is recommended that, except in places where *Late Verum* shows a distinct advantage over V 434, the latter type is the one that should be grown.

No 438, another recently developed strain, was tried on an extensive scale and did very well on the lighter description of soils, in the cotton tracts of Nimar and Buldana, bordering the Tapti and Poorna valleys. This strain has the same length of staple as V 434, and spinning tests show that it has maintained its performance of the past three years, being adjudged suitable for spinning up to 34 highest standard warp counts.

Work on the two *Bans*, EB 31 and 306, was continued. A wilt resistant strain in the narrow lobed type obtained from EB 31 has now been isolated and attention in future will be concentrated on this and the rest of the material will be discarded. It is a high yielding type, but it still remains to be seen whether the extra yield obtained compensates for its low ginning percentage which ranges round 27 to 28. *Bani* 306 no

longer suffers from the defects which caused the extinction of the old Hingan ghat. It resists wilt disease and ripens about the same time as the *neglectum*. The ginning percentage too has been considerably improved. But until the quality of cotton and not the ginning outturn becomes the basis of valuation there is little chance of extension of area under such superior cottons.

Another aspect of the work during the year has been the continuance of the examination of the possibilities of *Buri* (acclimatised *G. hirsutum*). *Buri* yields well in years of ample rainfall and does not suffer from wilt disease. The conditions during the past three years have been very favourable for it and the two strains *Buri Ak Special* and *Buri 107* especially developed for an area of some 50 000 acres in and around Burhanpur in the Nimar district have met with much favour and a considerable demand for their seed has sprung up.

The more recent selection work has among other things aimed at improving the *Verum* types in the plants against the strain in crop. The new isolations will respect in the coming season

The chief feature of the year was the development to the field scale stage of four new strains of cotton viz B 90 B 64 B 73 and B 61 These four strains have been bred from the wilt resistant stock of *Gossypium indicum* and their selection has been considerably facilitated by the technique of the Purity Chequer method They combine fineness of the lint with high yield and freedom from disease Arrangements have been made for their comparative trials on a field scale at the various Government Farms and on land of a few private growers in the coming season and it is anticipated that their performance will justify the confidence placed in them

was continued and a few useful strains were compared with each other and further selection made

Progress was also maintained in the physiological work which includes the study of the effects of various cultural and manurial treatments and meteorological conditions upon the growth and development of the cotton plant

Steady progress was also maintained in the work on rotation crops. AA 12 24 which was introduced four years ago has now become the most popular variety of groundnut in Berar and there has been a marked expansion in the area under it. Further work with rotation experiments has confirmed the results already obtained and there is now no hesitation in

recommending the three course rotation consisting of cotton, juar and groundnut as being the most profitable one for Berar from the points of view of cotton yields and land fertility.

62 Entomological Scheme—This scheme which was sanctioned in January 1934 commenced work in July 1934. It has for its object the preliminary survey of cotton boll worm pest in the Central Provinces and Berar with a view to ascertaining its incidence, method of carry over and the extent to which the results obtained from the Surat Boll worm Clean up Scheme can be utilised in these provinces. During the year under report the three types of boll worms viz. the Spotted Boll worm (*Paria fabia*), the Pink Boll worm (*Platyedra gossypiella*) and the Cotton Boll worm of America locally known as the gram caterpillar (*Heliothis (chloridea) obsoleta*) which cause a certain amount of damage to the cotton crop of the province were further studied at Akola and Nagpur. The first attack of the Spotted Boll worm was recorded in the middle of July and the highest percentage, viz. 18.5 both at Nagpur and Akola was reached during the period from the middle of October to the middle of November. During the first fortnight of October the big bolls were found attacked to the extent of 12.3 per cent and 2.5 per cent by the Pink Boll worm. The difference between the two attacks is that at Akola the attack was highest when the number of big size green bolls on the plants was the largest while at Nagpur it was highest when the number of big size bolls had declined.

The Pink Boll worm on the other hand has been found to be a serious pest in the Central Provinces and Berar. At Akola its attack commenced from the beginning of October and reached its highest level during November while at Nagpur it commenced a week later and never went beyond 2.15 per cent. Thus the Pink Boll worm causes more damage at Akola than at Nagpur.

The yield of *kapas* in the absence of boll worms was determined by night caging method at both places and it was found that the increase in the outturn of *kapas* was 49.6 per cent by weight. 92 per cent good locks were obtained from protected plants against 70.6 per cent from non-caged plants.

The removal and destruction of the shed forms every morning when there was wind without rain during the previous night was tried in the previous season both at Nagpur and Akola on small scale plots. During the present year the experiment was repeated on a field scale and the results of destruction of the fallen forms during December helps to check the activities

Observations to determine the time of emergence of Pink Boll worm moths from stored *kapas* and cotton seed were made both at Akola and Nagpur. At Akola the emergence of Pink Boll worm moths was found

Flowering, bolling and shedding records were collected at Parbhani for 10 plants of each of the 3 strains, *G4*, *G6* and *Hauri 3*, for further study

There were two varietal tests, the first experiment was conducted with *Gaorani Local* and 4 strains, viz, *Gaorani 3 B-1*, *Gaorani 4*, *Gaorani 6* and *Gaorani 58E* on three sites at the Government Experimental Farm, Parbhani, and on one site each at the Variety Testing Stations, Latur and Mudhol. These tests have shown that *G4* and *G6* gave higher yields than the Local at two sites. *G3B1* gave the highest yield at Mudhol, and significantly higher yields at all the 3 sites, while *G58E* gave higher yield than the local variety at only one site.

The second varietal test was conducted with the local variety of Parbhani with the 4 strains *G1A*, *G12F*, *P26H* and *Hauri 3* at the Government Experimental Farm, Parbhani. *Hauri 3* gave the highest yield but the difference in its yield and that of the local variety was not significant. *G1A* and *P26H* gave significantly lower yields, while *G12F* gave a slightly higher yield than the local variety. However, *G12F* was not significantly higher than the local variety and old strains and gave higher yields than

A comparative test was conducted with 23 of the strains. 16 of them were significant in yield. *G4B*, the leading *Gaorani* strain of the past three years, 16 strains were better yielders but the differences were significant only in the case of two strains, viz, *G115* and *G58A-1*.

Other work included the study of resistance to wilt and the purity of new strains, the maintenance of types in pure cultures and district trials. Seed of *G6* was sown over 25½ acres at the Government Experimental Farm, Parbhani, and yielded 520 lbs of seed cotton per acre. 3rd and 4th generation seed of this strain was sown on about 4,986 acres at Karkheli and surrounding villages in Mudhol taluka of Nanded district. The average yield was 182 lbs of *lapas*. Seed cotton of *G6* fetched a premium of Rs 5-8 per *khandi* of 960 pounds. The lint also fetched a higher price than the lint of local types. Seed sufficient to cover 50,000 acres has been collected and its distribution is in progress.

Trial of American varieties like 4 *Punjab American*, 3 *Sind* and 13 *Cambodia* strains and 52 single plant progenies of *Parbhani-American 1* was also undertaken. *Punjab* and *Sind* strains were early and prolific but more susceptible to jassids. *Cambodia*s matured very late and suffered heavily from boll worm attack and gave lower yield, whereas *Parbhani American*, which was found jassid-resistant, gave good yields.

Observations on the life history of Pink Boll-worm showed that under laboratory conditions long cycle moths had an average life of about 30 days and some as many as 69 days. From the 'carry over' studies of the past three years, it appears that complete removal of cotton stalks soon after final picking, completion of cotton ginning before 1st May and the prohibition of the growing of *Bhend* in the hot weather will go a long way towards checking this pest. Growing an early maturing variety is another means of reducing the damage done by the pest.

68 *Cotton Survey Scheme*—This scheme started in June 1931 and closed down in June 1936. The objects were (1) to collect and test, on a central farm, the types of cotton grown in the State, and (2) to determine the proportion of different varieties of cotton in the crop of the various parts of the State.

Small samples of seed were obtained from well scattered and representative villages of each cotton growing district. These were sown each separately at the Government Experimental Farm, Parbhani, or Rudroor (Nizamabad district) according to their season (Autumn harvested or Spring harvested). Nearly 200 plants of each sample were classified into different botanical species and varieties. The total number of samples studied in 5 years was 971. In addition, 200 plants in each survey number from cultivators' fields, representative of the standing crop, were collected and classified according to different varieties.

The survey has been very complete and has accomplished the object for which it was started. The results obtained are summarised below—

Botanical—*Gossypium neglectum* var *rosea* predominates in the districts of Aurangabad and Parbhani, and in parts of Bhir, Osmanabad and Adilabad districts, whereas *Gossypium neglectum* var *cutchica* is the chief component of the *Mungari* crop of Karnatak districts.

Gossypium indicum is the principal predominating type in Nanded and Bidar districts and parts of Adilabad, Bhir and Osmanabad districts and also in Karimnagar, and northern part of Warangal and eastern half of Adilabad districts.

Gossypium herbaceum forms the bulk of the *lingari* crop of Karnatak, and the *rabi* crop of Nizamabad, Karimnagar and Warangal districts.

Gossypium obtusifolium var *Coconada* forms the chief constituent of the crop of Nalgonda and southern part of Warangal district.

Gossypium hirsutum is present in varying proportions in the crop of a major part of the cotton tract, and in some villages it is grown almost pure.

Commercial

Hyderabad Oomras cover over two million acres and total 300,000 bales annually. The cotton is short stapled and coarse and fit for spinning 8-12's.

counts Most of this cotton is exported Very little botanical work has been done for the improvement of this variety

Hyderabad Gaoran covers about 900,000 acres and its annual production amounts to about 110,000 bales It is one of the finest Indian cottons and is much liked by the Indian mills It is fit for 24 30's warp counts Only two to three thousand bales are exported annually out of India Nearly 8,000 acres will be under improved strains of this variety in 1936 37.

Southerns, also known as *Kumplas*, cover about 400,000 acres every year, producing about 50,000 bales The staple length is $\frac{3}{4}$ th inch to $\frac{7}{8}$ th inch and the fibre is fit for spinning 20 24's counts

Coconadas cover about 20,000 acres only and their annual production amounts to about 2,500 bales It is a low ginning type The fibre is dark coloured and fit for 10 20's warp counts No botanical work has been done with this cotton so far

BARODA

69 *The Root Rot Scheme*, which was sanctioned in July 1931, commenced work in February 1932, with the double object of studying the root rot disease and securing a few suitable strains of cotton which are resistant to this disease The work of the previous years has shown that the disease is less severe in years of normal rainfall than in years of heavy rainfall and also in late sown crop than in early sown crop The affected cotton roots contain the organisms of *Macrophomina phaseoli* and *Nematodes* Infection trials were made with these organisms observed that a mixture of these two either was used singly A series of t survivals will be transplanted in fields heavily infected by the organisms Several chemicals and disinfectants were used against *Sclerotia* (resting spores) resistance, but the results obtained require further confirmation

Manurial and disinfecting treatments were tried on a field scale with different quantities of manure per acre but none of the treatments was significantly better than the control It seems that sulphur treatment also is n against root rot, sulphur treatment also is n reducing the root rot mortality effectively () progeny test of *K S* was tested for each progeny showing higher resistance have been selected for further trial replicated progeny rows, but the res plant of *B S* which was found unaffected The produce of this plant has been carefully saved for further trial next year

Under non replicated progeny trials, 48 individual strains were grown with *Broach 9* as control and 17 strains have been selected for further trials Four promising varieties, viz, *K S*, *No 8+B S*, *D S* and *B 9*, were tried

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Coconadas cover about 20,000 acres only and their annual production amounts to about 2,500 bales. It is a low ginning type. The fibre is dark coloured and fit for 16-20's warp counts. No botanical work has been done with this cotton so far.

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Manurial and disinfecting treatments were tried on a field scale with different quantities of manure per acre but none of the treatments was significantly better than the control. It seems that no manure is effective against root rot, sulphur treatment also is not of much use in checking or reducing the root rot mortality effectively. On the botanical side, replicated progeny test of K S was tested for root rot resistance and 5 plants from each progeny showing higher resistance, yield and best economical characters have been selected for further trial. No 8 and B S were similarly tried in replicated progeny rows, but the results were not satisfactory except one plant of B S which was found unaffected. The produce of this plant has been carefully saved for further trial next year.

Under non replicated progeny trials, 48 individual strains were grown with *Broach 9* as control and 17 strains have been selected for further trials. Four promising varieties, viz., K S, No 8+B S, D S and B 9, were tried.

for root resistance and it was found that *K S* was more resistant than the rest of the varieties. Future breeding work will therefore, be concentrated on *K S* material.

70 *The Goghari*

Survey Scheme in the of *Goghari* cotton crop

to gineries and to inducing the gin owners to gin it separately and dispose of the seed for cattle food. During the year under report the survey was confined to the same Navsari tract. The total area surveyed during the year amounted to 63 372 *bighas* against 55 012 *bighas* of last year. Only $\frac{1}{2}$ per cent of this area contained a small mixture of *Goghari* not exceeding 5 per cent while the rest of the area was practically pure. A sustained propaganda by the Agricultural Societies of the cotton survey staff and the activities of the cotton survey staff and the Control Act were mainly responsible for suppressing *Goghari* with pure cotton.

71 *Plant Puller Propaganda Scheme*—This scheme commenced

in January 1936. It is similar to the Plant Puller Propaganda Scheme in Bombay and effect encourage up their work was Broach and Surat districts of the Bombay Presidency. During the year under report the number of plant pullers sold in Navsari district was 1 563 as against 577 in the previous year. In Baroda 4 012 were sold against 3 198. magic lantern lectures and other obvious that further propaganda plant pullers.

BIKANER

72 *Bengals Cotton Improvement Scheme*—The opening of the Gang

Canal under the Sutlej virgin area known as t from the Punjab who t *Desi* and American ty successfully cultivate cotton under local conditions evidently because the new environment was not quite the same as they were accustomed to in

During the year under review, the U P strain *C 520* which had proved most suitable among the *Desi* types for the tract was found defective in

germination due to rigorous climatic conditions and further selections were made in it and grown in progeny rows. Five best families which had the best germination were selected for further trials. 36 good plants from *F₂* hybrids of *C 520* x *Bani*, were selected and examined for lint length and ginning percentage. The best 10 of these were retained for further trials. The trials of Asiatic American hybrids, which did not give satisfactory results have been given up. Experiments on six types of American cottons from the Punjab and two desi types, *C 520* and *Malvi 9*, were conducted both in the light and heavy *ghaggar* bed soils with different irrigations. In the light soils, the American cotton, *P 289F*, gave the heaviest yield and among Desi cottons *C 520* was about the best. Difference in irrigation had no effect on staple length. The season happened to be particularly favourable for the American cottons. The effect of thinning was not so marked as in the previous year. Thinning gave an increased yield in the light soils but in the heavy soils it was just enough to maintain the yield. Thinning was uneconomical.

MYSORE

73 *Doddahathi (American) Cotton Scheme*—This scheme, which was sanctioned in February 1935, commenced work in November 1935. It has for its object the breeding of suitable types from the local *Doddahathi* or American cotton resistant to "Red Leaf" disease which stands in the way of the expansion of this crop in the Irwin Canal area in Mysore State. The work of the year indicates that certain varieties, like *Sea Island*, *Boss III-16* and *Acala* are more susceptible to "Red Leaf" disease than other varieties like *Co 2*, *M A II*, *N T 38* or *38 F*. A large number of crosses were made with exotic varieties and their progenies will be tested next year.

In the sowing date trials, *M A II*, *Sind Sudhar*, and *N T 38 (3SF)* gave best results when they were sown on the 1st June, 15th June and 15th May, respectively.

74 *Tour in Iran to collect Herbaceous cottons*—In connection with the work on medium or long staple cotton in Iran, it was ascertained that no work had been done in this tract. With a view to find out the extent of the tract, a member of the staff was sent on a tour to Iran to collect Iranian (*herbaceous*) cottons for study along with Indian cottons. The tour has been successful and the collector has brought back about 1,400 seed samples from individual plants.

The best material of *G. herbaceum* was obtained from the eastern districts visited. Good material was also found in western Iran, but that collected in the north was inferior. The indigenous cottons exhibit great variability in ginning percentage, lint length and lint fineness. The introduced cottons were variable in the first two characters only.

The *herbaceums* met with in Iran were all sympodial. To hasten maturity, it is a general practice in Iran, particularly in the eastern area, to pluck the leaves and top the stem of the plants.

Of the material collected, some of the *hirsutums* have been sent to the Cotton Research Botanist, Punjab, and some to the Cotton Specialist, Coimbatore, of the *herbaceums*, some have been sent to the Cotton Specialist, Coimbatore, and the remainder to the Cotton Botanist, North Gujarat, Viramgam.

75 *The Joint Scheme for the estimation of effects on cotton crop of the use of plant puller in Bombay Presidency and Baroda State*, which was sanctioned in August 1936, came into operation in December 1936. The object of the scheme is to obtain an exact or nearly as exact as possible an estimate of the benefits derived from the use of the plant puller. The work was carried on both in Bombay Gujarat and Baroda State. The results give indications that pulling is advantageous. Climatic conditions were, however, peculiar so that precise estimation of the effect could not be made. The work will be repeated.

CHAPTER V.

SEED DISTRIBUTION AND EXTENSION SCHEMES

76 During the year under review the Government has itself chiefly to that if its work should be made the Committee and Co operative Sale Societies in the more extended distribution of pure seed of improved varieties of cotton. The year under review began with 12 seed distribution and extension schemes. In addition to these, two new schemes were started during the year. The details of the work done are given in the following paragraphs.

MADRAS

77 *Tiruppur and Co 2 (Cambodia) Schemes*—The Madras (Tiruppur) Seed Extension Scheme was sanctioned in 1929 for a period of five years with the object of providing for the pay of an officer to act as an adviser to a group of Co operative Societies in Coimbatore district which were growing improved strains of Cambodia cotton and also to help the Agricultural Department in their seed distribution work. It started work in May 1931 and was extended in June 1936 for a short period of three months. This scheme Co 2 1932 and Coimbatore districts through the agency of the Madras Agricultural Department and the Tiruppur Co operative Trading Society. The object of the second with a 6,000 seed produced in this area for 100,000 acres guaranteed the Tiruppur Co operative Trade seed transactions up to a maximum of 10 per cent of the total purchase of seed and interest thereon at 5 per cent of the total quantity of 1,000 acres, were dis the year, the actually sown was therefore reduced to 5,117 acres in addition, the area

81 *Khandesh (Jarila) Scheme*—This scheme for the supply of pure *Banilla* cotton seed for the Deccan Canals area was sanctioned in January 1934 and started work in April 1934 on the Government Farm at Kopergaon. Unlike other seed schemes, this scheme is expected to be self supporting. Of the sixty acres set apart for the scheme at the Kopergaon Government Farm 31.5 acres were under cotton and the remaining 28.5 acres under groundnut during the year. Cotton suffered from adverse weather conditions and damage by pests and diseases, and gave a total yield of 21,359 lbs of *kapas* or 678 lbs per acre, against a total yield of 22,378 lbs of *kapas* or 733 lbs per acre, last year. All the *kapas* was ginned at the Farm and 8,875 lbs of good seed were sent for distribution in the canal area and dry tract. Groundnut gave an average yield of 1,285 lbs per acre against 1,630 lbs last year. At its request the Committee sanctioned the expansion of the area for the year, i.e., during 1938-39, on the same growing demand for the seed.

82 *Deccan Canals (Banilla) Scheme*—This scheme for the supply of pure *Banilla* cotton seed for the Deccan Canals area was sanctioned in January 1934 and started work in April 1934 on the Government Farm at Kopergaon. Unlike other seed schemes, this scheme is expected to be self supporting. Of the sixty acres set apart for the scheme at the Kopergaon Government Farm 31.5 acres were under cotton and the remaining 28.5 acres under groundnut during the year. Cotton suffered from adverse weather conditions and damage by pests and diseases, and gave a total yield of 21,359 lbs of *kapas* or 678 lbs per acre, against a total yield of 22,378 lbs of *kapas* or 733 lbs per acre, last year. All the *kapas* was ginned at the Farm and 8,875 lbs of good seed were sent for distribution in the canal area and dry tract. Groundnut gave an average yield of 1,285 lbs per acre against 1,630 lbs last year. At its request the Committee sanctioned the expansion of the area for the year, i.e., during 1938-39, on the same growing demand for the seed.

83 *B D 8 Scheme*—This scheme for the distribution and extension of *B D 8* cotton seed was sanctioned in August 1935 for a period of 3 years and commenced work in December 1935. During the year, an area of 20,012 acres was under pure *B D 8* cotton in the Broach district which gave a total yield of 4,500 bales. Of this, 1,522 bales were sold through sale societies at a premium ranging between Rs 46 and Rs 58 on *Broach*. The remaining 2,978 bales were purchased from cultivators by gineries at a premium of Rs 37 to Rs 52 on *Broach*.

SIND.

81. *The Sind Scheme* commenced in April 1931 and on the expiry of its first sanctioned period of 3 years it was extended for a further period of 5 years. The work of the past six years has definitely proved that the Right Bank area of the Indus is as suitable as any other part of Sind for growing long staple cotton and it is now proposed to pay special attention to seed distribution, the introduction of better methods of cultivation, and the extension of cotton in lands under the Barrage area. Cotton cultivation was unknown on this side of the Indus before the commencement of this scheme, but as a result of intensive propaganda carried on by means of field demonstrations, shows, public meetings, etc., the area under cotton has now gone up to 42,000 acres against 17,000 acres in the previous year and 25 acres in 1931-32.

The work on the Right Bank is mainly concerned with the introduction of cotton cultivation, while on the Left Bank attention is largely devoted to seed distribution and extension of improved varieties of cotton and the introduction of better methods of cultivation. During the year under report, the area under cotton in Sind went up to 976,832 acres (including 63,229 acres in Khairpur State) from 790,858 acres last year, and of this area 508,589 acres were occupied by American varieties and 408,244 by Desi.

CENTRAL PROVINCES AND BERAR.

85 *Verum Seed Distribution and Marketing Scheme*—In November 1929, the Committee sanctioned, for a period of one year in the first instance, the Central Provinces *Verum* seed distribution and extension scheme. It started work in September 1930 and was extended annually up to the end of July 1934, when it was combined with the newly sanctioned scheme for the extension of long staple cottons in the Central Provinces. The combined scheme which is sanctioned for five years is known as the scheme for the extension of long staple cottons and marketing of *Verum* cotton in the Central Provinces and Berar.

of pure cotton were dis-
and of Rs 19 on *Oomras*
st year The premium
since the marketing of
Verum cotton was undertaken It is estimated that an area of 113,371 acres
will be covered by *Verum* cotton during 1937-38 There is a slight fall in
the area due to low premium obtained during 1936-37 season and unfavourable
weather conditions

UNITED PROVINCES

86 *C 402 Scheme*—This scheme was sanctioned in January 1934 for a period of five years for the distribution of *C 402* seed in the Hardoi, Lucknow and Sitapur districts of the United Provinces and commenced work in May 1935. Though superior to the local cotton, *C 402* requires more careful cultivation and it was therefore decided early in 1935 to restrict its distribution to Madhoganj and Bilgram *tehsils* only, where it gives satisfactory results without extra labour and to extend, in the remaining areas covered by the scheme, another variety, *C 520*, which is better suited for them than *C 402*. During the year, the total area under *C 402* and *C 520* was 2,618 and 1,000 acres, respectively, but only 1,362 and 258 acres, respectively, were picked owing to unfavourable weather conditions. The average yield of *C 402* was from 1 to 3 *maunds* per acre and that of *C 520*, 1 to 4 *maunds* per acre under cultivators' conditions, against 4 to 6 *maunds* and 7 to 10 *maunds*, respectively, in the previous year.

HYDERABAD STATE

87 *The Hyderabad Scheme* was sanctioned in November 1929 and started work in March 1930. It was extended for three years in January 1933 and subsequently for a further period of six months up to the 31st August 1936. In August 1936, the Committee sanctioned a further extension for four and half years subject to the condition that at least fifty per cent of the cost should be met by the State. During the first two years of the scheme, *Dharwar No 1* and *Gadag No 1* seeds were distributed but as a result of the experiments conducted by the Hyderabad Agricultural Department, and in view of the fact that the Bombay Agricultural Department had found the *Jayawant* variety more suitable for the neighbouring areas of that province, the distribution of *Dharwar No 1* seed was discontinued in 1931-32 in favour of *Jayawant*.
of obtaining seed from the Hubli and
seed required for the year under
growers. During the year the rain
which the sowing of cotton depends
therefore, delayed by about a month. Consequently the total quantity of
Jayawant and *Gadag No 1* seed distributed during the year amounted to
374,633 lbs sown over an area of 13,871 acres, against 553,880 lbs of seed
sown over an area of 41,256 acres, last year.

The Department of Agriculture organised during the year a seed multiplication area of 3,000 acres which is expected to yield 285,500 lbs pure seed for distribution during 1937-38 season.

BARODA STATE

88 *The Baroda (Narsari Seed Storage) Scheme* was sanctioned in February 1933 for a period of five years for the rapid spread of 1027 *A.L.F.*

in the Baroda territory, and started operations in April 1934. The total seed amounting to 314,432 lbs of which issued to 'A' class growers for an dependable quality seed to 'B' class arm grown seed for supply to 'A' class growers has all along been felt to be a weak spot in the Baroda seed organisation and the State have now taken steps to remedy this defect by opening a seed farm of about 70 acres. This area will form the nucleus from which 'A' class growers will receive their seed. 447,516 lbs of seed of dependable quality for sowing in 1937 season have been obtained and it is expected that the whole of this quantity will be disposed of.

RESEARCH STUDENTS

89 Ever since its establishment, one of the chief concerns of the Committee has been the training of research workers in the several sciences pertaining to cotton. Distinguished graduates from Indian Universities are selected and placed for training under experienced research workers on

are granted

Scholarships are awarded under two categories, viz, Training Grants and General Scholarships. Training Grants are intended for Government servants who are recommended by their Provincial Governments or States and for employees of the Committee who are considered suitable. General Scholarships are awarded to University Graduates not already in service. Applications for these scholarships are invited by advertisement in all leading Indian newspapers and the awards are made by the Research Students Selection Sub Committee.

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The expenditure on Research Studentships up to 31st August 1937 amounted to Rs 2,61,172

D N MAHTA,
Secretary

APPENDIX I

MEMBERS OF THE COMMITTEE

RESIDENT—

Sir Bryce Burt CIE MBE IAS Offg Vice Chairman Imperial Council
of Agricultural Research *ex officio*

- (a) The Expert Adviser to the Imperial Council of Agricultural Research in
Agricultural matters *ex-officio*

(2) REPRESENTATIVES OF AGRICULTURAL DEPARTMENTS—

<i>Madras</i>	Mr R. Y. Rao Bahadur D. Ananda Rao Garu Director of Agriculture
<i>Bombay</i>	The Director of Agriculture
<i>United Provinces</i>	The Director of Agriculture
<i>Punjab</i>	The Director of Agriculture
<i>Central Provinces</i>	Mr R. H. Hill IAS Offg Director of Agriculture

- (3) THE DIRECTOR GENERAL OF COMMERCIAL INTELLIGENCE AND STATISTICS *ex officio*

(4) REPRESENTATIVES OF CHAMBERS OF COMMERCE AND ASSOCIATIONS—

The East India Cotton Association	Sir Purshotamdas Thakurdas CIE MBE (<i>Vice President</i>)
The Bombay Millowners Association	Mr S. D. Saklatvala M.L.A.
The Bombay Chamber of Commerce	Mr S. B. Samolys
The Indian Merchants Chamber	Mr Chandulal P. Parkh, M.L.A.
The Karachi Chamber of Commerce	Mr G. C. R. Coleridge
The Ahmedabad Millowners Association	Mr Kasturbhai Lalbhai
The Tuticorin Chamber of Commerce	Mr J. Vonesch
The Upper India Chamber of Commerce	Mr J. Tinker
The Empire Cotton Growing Corporation	Mr W. Roberts CIE

(5) AND (6) COMMERCIAL REPRESENTATIVES NOMINATED BY LOCAL GOVERNMENTS—

<i>Central Provinces</i>	{ Mr P. V. Deshmukh. Mr D. K. Kano
<i>Madras</i>	Mr J. Nuttall
<i>Punjab</i>	Mr Balak Ram
<i>Bengal</i>	Mr Akhil Bandhu Guha

(7) CO-OPERATIVE BANKING REPRESENTATIVE—

Sr Chunilal V. Mehta, K.C.S.I.

(8) REPRESENTATIVES OF COTTON GROWING INDUSTRY—

Madras .. ..	..	{ M.R.Ry. V. C. Palaniswami Gounder Ari M.R.Ry. Rao Bahadur B. P. Sessa Reddi Garu
Bombay .. ..	..	{ Sardar Rao Bahadur Bhumbhai Ranchodp Naik Rao Bahadur C. S. Shirahatti.
United Provinces ..	..	{ Khan Bahadur Shah Nazar Husam. Rai Bahadur Lala Anand Sarup
Punjab .. ..	..	{ Sardar Sahib Gurbachan Singh, M.L.A. Mian Nurullah.
Central Provinces and Berar ..	..	{ Rao Bahadur Sir Madhanso Deshpande, K.B.E. Mr M. P. Kolhe.

(9) AND (10) REPRESENTATIVES OF INDIAN STATES—

Hyderabad State ..	Mr Nizam ud Din Hyder, Director of Agriculture
Baroda State ..	Mr R. G. Allan, C.I.E., Commissioner of Agriculture.
Gwalior State ..	Mr G. K. Lele, Deputy Director of Agn culture, Malwa Division.
Rajputana and Central India States ..	Mr T. R. Low, I.A.S.

(11) ADDITIONAL MEMBERS NOMINATED BY THE GOVERNOR GENERAL-IN COUNCIL—

- 1 Mr D. N. Mahita*, Economic Botanist for cotton, Central Provinces.
- 2 Rao Bahadur S. S. Sahasrabudhe Deputy Director of Agriculture, Southern Division, Dharwar
- 3 Dr V. K. Badami, Ph.D., Deputy Director, Department of Agriculture in Mysore State, Bangalore
- 4 M.R.Ry. V. Ramanatha Ayyar A.I., Cotton Specialist, Coimbatore
- 5 Musahib (Khan) Bahadur S. V. Kanungo, Finance Minister, Holkar State, Representative of the Holkar State.
- 6 Hoo Sahib J. I. Thadani Director of Agriculture Sind, Karachi
- 7 Seth Iswarlal Varindmal M.L.A. Representative of the Karachi Indian Merchants Association.
- 8 The Economic Botanist (Cotton) to the Government of the United Provinces Cawnpore
- 9 Mr Sayed Miran Muhammad Shah, M.A.O., 50, Cantonment, Hyderabad, Sind.
- 10 Hoo Sahib Farrukhbeg Sadikahibeg Mirza, Nawabshah, Sind.
- 11 Lala Shri Ram Representative of the Cotton Millowners of Delhi
- 12 Mr Chellaram Khewarlam, Representative of the Karachi Cotton Association, Ltd.
- 13 Dewan Bahadur Sir T. Vijayaraghavacharya K.B.F.

* Since appointed Secretary of the Committee.

APPENDIX II

CONSTITUTION OF SUB-COMMITTEES

STANDING FINANCE SUB COMMITTEE

Sir Bryce Burt (<i>ex-officio</i>)	Mr J Vonesch
Sir Purshotamdas Thakurdas (<i>Chairman</i>)	Rao Bahadur Sir Madhavrao Deshpande
Mr S D Saklatvala	Sir Chunilal V Mehta
Mr Kasturbhai Lalbhai	Mr S B Samuels
Mr G C R Coleridge	

LOCAL SUB COMMITTEE

Sir Bryce Burt	Mr J Vonesch
Sir Purshotamdas Thakurdas	Mr Chandulal P Parikh
Mr S D Saklatvala	Mr G C R Coleridge
Sardar Rao Bahadur Bhumbhai Ranchodji Naik	Sir Chunnilal V Mehta.
Mr W J Jenkins	Mr S B Samolys
Rao Bahadur Sir Madhavrao Deshpande	Mr Kasturbhai Lalbhai

COTTON GINNING AND PRESSING FACTORIES SUB COMMITTEE

Sir Purshotamdas Thakurdas	Mr J Tinker
Mr S D Saklatvala	Mr J Nuttall
Mr W J Jenkins	Mr W Roberts
Mr Kasturbhai Lalbhai	Vacant (three seats)
Mr G C R Coleridge	

The Co-operative Banking Representative—Sir Chundal V Mehta and Mr Chellaram Shewaram—(Co opted Member)

AGRICULTURAL RESEARCH SUB COMMITTEE

- I *The President*—Sir Bryce Burt
 II *The Vice President*—(ex-officio)
 III *The Co operative Banking Representative*—Sir Chunilal V Mehta
 IV *Cotton Growers Representatives*—Mr W Roberts Mian Nurullah, Rao Bahadur
 Sir Madhavarao Deshpande
 V *Cotton Trade Representatives*—Mr Kasturbhai Lalbhai, Mr D K. Kane, Mr
 Chandulal P Parikh
 VI *Agri*
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 VII *Additional Members*—Dewan Bahadur Sir T Vijayaraghavacharya, Mr Chella
 ram Shewaram, Mr Mohammad Afzal Rai Sahab Kaldas Sawhney,
 Mr K. Ramiah, and
 VIII *The Secretary*

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STANDING FINANCE SUB COMMITTEE

Sir Bryce Burt (<i>ex-officio</i>)	Mr J Vonesch
Sir Purshotamdas Thakurdas (<i>Chairman</i>)	Rao Bahadur Sir Madhavrao Deshpande
Mr S D Saldatvala	Sir Chundal V Mehta
Mr Kasturbhai Lalbhai	Mr S B Samoilys
Mr G C R Coleridge	

LOCAL SUB COMMITTEE

Sir Bryce Burt	Mr J Vonesch
Sir Purshotamdas Thakurdas	Mr Chandulal P Parikh
Mr S D Saklatvala	Mr G C R Coleridge
Sardar Rao Bahadur Bhumbhai Ranchodji Naik,	Sir Chunilal V Mehta
Mr W J Jenkins	Mr S B Samodys
Rao Bahadur Sir Madhavrao Deshpande	Mr Kasturbhai Lalbhai

COTTON GINNING AND PRESSING FACTORIES SUB COMMITTEE

Sir Purshotamdas Thakurdas	Mr J Tinker
Mr S D Saklatvala	Mr J Nuttall
Mr W J Jenkins	Mr W Roberts
Mr Kasturbhai Lalbhai	Vacant (three seats)
Mr G C R Colledge	

The Co operative Banking Representative—Sir Chunilal V Mehta, and Mr. Chellaram Shewaram—(Co opted Member)

AGRICULTURAL RESEARCH SUB COMMITTEE

- I The President—Sir Bryce Burt
II The Vice President—(ex-officio)
III The Co operative Banking Representative—Sir Chunilal V Mehta
IV Cotton Growers' Representatives—Mr W Roberts, Mian Nurullah, Rao Bahadur Sir Madhaorao Deshpande
V Cotton Trade Representatives—Mr Kasturbhai Lalbhai, Mr D K. Kane, Mr Chandulal P Parikh
VI Agricultural Officers—The Agricultural Expert to the Imperial Council of Agriculture
VII Additional Members—Dewan Bahadur Sir T Vyayaraghavacharya, Mr Chellaram Showaram, Mr Mohammad Afzal, Rai Sahab Kalidas Sawhney, Mr K. Ramiah, and
VIII The Secretary

WIDER MARKETS SUB COMMITTEE

The President	Mr R H Hill
The Vice-President.	Mr Balak Ram
Dewan Bahadur Sir T Vijayaraghavacharya.	Sardar Rao Bahadur Bhimbhai Ran chodji Naik
Mr H R Stewart	Rao Bahadur D Ananda Rao Garu
Mr P B Richards	Mr Nizam ud Din Hyder
Dr W Burns.	Mr W J Jenkins
Mr S D Saklatvala	Mr Chellaram Shewaram
Mr J Vonesch	Mr Kasturbhai Lalbhai
Mr Chandulal P Parikh	Dr Nazir Ahmad
Mr P V Deshmukh.	Mr R G Saraiya—Additional member
Mr W Roberts	Vacant (one seat)
Rao Sahab K. I Thadani	

STANDARDS SUB COMMITTEE

Mr S H Gidwani (Representing the Imperial Council of Agricultural Research)
Mr Haridas Madhavdas, Mr Varjivandas Motilal (Representing the East India Cotton Association, Ltd.)
Mr D McCallum, Mr Nechaldas Chhangomal (Representing the Karachi Cotton Association, Ltd)
Rao Bahadur Sir Madhavrao Deshpande, Mr M P Kolhe (Representatives of cotton growers of Berara Tract)
Mr Himatlal Jagjiwandas Vadodaria, Mr Vadilal Chunilal Doshi (Representatives of cotton growers of Mathia Tract)
Mr Akhubava Takhtasinghji Chudasama, Mr Mulchand Vardhman Shah (Representatives of cotton growers of Dholleras Tract)
Mr Haribhai Jhaverbhai Amun, Mr Ardeshr Jamahedji Kapadia (Representatives of cotton growers of Brosch Tract)
Rao Bahadur S J Deshmukh, Rao Bahadur B L Patil (Representatives of cotton growers of Kumpta Tract)

APPENDIX III.

POLICY OF THE COMMITTEE REGARDING APPORTIONMENT OF COST OF SCHEMES BETWEEN THE COMMITTEE, PROVINCIAL GOVERNMENTS AND INDIAN STATES RECOMMENDATIONS OF THE SPECIAL SUB-COMMITTEE AS FINALLY APPROVED BY THE COMMITTEE.

Expenditure on seed schemes should be divided into (1) cost of staff and (2) incidental charges on the distribution of seed of approved varieties less receipts, if any. The Committee should pay either the cost of staff or the incidental expenditure but not both. Seed schemes should be sanctioned for periods not exceeding five years in the first instance and they may be extended subsequently for a further period of five years on the condition that (a) the Committee's share of the expenditure in the second period should be to the extent of 75 per cent. either on the pay of the staff or incidental expenditure and (b) that the Local Government concerned contributes not less than the sum spent during the original period of the scheme. It is not necessary that the grant for the renewal period should be less than for the first sanctioned period, but the Committee's contribution should not exceed 75 per cent. The maintenance of a nucleus of each approved variety for seed propagation should be undertaken by the Cotton Breeder as part of the breeding scheme and should be financed by the Indian Central Cotton Committee and an area of one acre of the nucleus is considered to be the irreducible minimum for each variety. The Committee should meet the cost of the maintenance of a nucleus of seed from all varieties of seeds in the species of which had been approved by it. The Sub Committee agreed that in each financial year it should be decided when a change in the variety under distribution was made as approved by the Indian Central Cotton Committee further continuance of the scheme should be treated as a new seed distribution scheme and not as a renewal of the original plan. Research which should be financed up to a period of ten years in full, subject to review at the end of 3rd, 5th and 8th year as at present. To justify further financial help after ten years special technical or scientific reasons are necessary. This is all the more necessary if the Committee's share is to exceed 50 per cent. of the total expenditure to which it should normally be limited. It was agreed that any scheme affected in the near future should be fully financed by the Committee for one full year more to enable the Director of Agriculture concerned to obtain the necessary finance from his Government for the subsequent years.

APPENDIX IV.

LIST OF RESOLUTIONS.

- "The Indian Central Cotton Committee urges the East India Cotton Association, Ltd., to take steps to broaden the Broach Hedge Contract in such a way as to make it a safer hedge for more good quality Indian stapled cotton, and thereby prevent cotton-growers being subjected to unavoidable losses by manipulations in the Bombay market."
- "That the Indian Central Cotton Committee places on record its appreciation of the action of the Holkar Durbar in forming a Cotton Committee and trusts that it will be found to be of much benefit in the solution of local problems. The Indian Central Cotton Committee will be pleased to render any assistance that may be required."
- "That the Indian Central Cotton Committee places on record its appreciation of the action of the Holkar Durbar in forming a Cotton Committee and trusts that it will be found to be of much benefit in the solution of local problems. The Indian Central Cotton Committee will be pleased to render any assistance that may be required."
- "That the Indian Central Cotton Committee places on record its appreciation of the action of the Holkar Durbar in forming a Cotton Committee and trusts that it will be found to be of much benefit in the solution of local problems. The Indian Central Cotton Committee will be pleased to render any assistance that may be required."
- "That the suggestion regarding an overseas organisation be approved in principle and that the Committee be authorised to take such steps as may be necessary to bring it into existence."
- "The Indian Central Cotton Committee notes with pleasure that the Kutch Darbar has decided to open the Kutch State of all foreign cotton to the Kutch State of all foreign cotton, and trusts that those maritime States who will also fall in line at no late date will be able to do so."
- "The Indian Central Cotton Committee records its thanks to the Jhalawar Darbar for the very thorough enquiry undertaken by them to ascertain the extent to which outside cotton is imported into the State and trusts that no time will be lost in adopting legislative measures to prevent such imports, if and when found necessary."
- "The Indian Central Cotton Committee places on record its appreciation of the action of the Government of the Central Provinces in passing the Central Provinces Cotton Control Act which has for its object the eradication of Garrow Hill cotton. The Committee has no doubt that the suppression of this cotton is in the best interests of the growers of better quality cotton in the province and trusts that early steps will be taken to frame the required rules under the Act and apply them where necessary."

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POLICY OF THE COMMITTEE REGARDING APPORTIONMENT OF COST OF SCHEMES BETWEEN THE COMMITTEE, PROVINCIAL GOVERNMENTS AND INDIAN STATES—RECOMMENDATIONS OF THE SPECIAL SUB-COMMITTEE AS FINALLY APPROVED BY THE COMMITTEE.

Expenditure on seed schemes should be divided into (1) cost of staff and (2) incidental charges on the distribution of seed of approved varieties *less* receipts, if any. The Committee should pay *either* the cost of staff or the incidental expenditure but not both. *Seed* *scheme* *not* *should* *be* *sanctioned* *for* *periods* *not* *exceeding* *five* *years* *in* *the* *first* *instance* *and* *they* *may* *be* *extended* *subsequently* *for* *a* *further* *period* *of* *five* *years* *on* *the* *condition* *that* *(a)* *the* *Committee's* *share* *of* *the* *expenditure* *in* *the* *second* *period* *should* *be* *to* *the* *extent* *of* *75* *per* *cent* *either* *on* *the* *pay* *of* *the* *staff* *or* *incidental* *expenditure* *and* *(b)* *that* *the* *Local* *Government* *concerned* *contributes* *not* *less* *than* *the* *sum* *spent* *during* *the* *original* *period* *of* *the* *scheme*. It is not necessary that the grant for the renewal period should be less than for the first sanctioned period, but the Committee's contribution should not exceed 75 per cent. The maintenance of a nucleus of each approved variety for seed propagation should be undertaken by the Cotton Breeder as part of the breeding scheme and should be financed by the Indian Central Cotton Committee and an area of one acre for the purpose is considered to be the irreducible minimum for each variety. The Committee should meet the cost of the maintenance of a nucleus of seed from all varieties of cotton, the spread of which had been approved by it. The Sub Committee agreed that in Seed Distribution Schemes when a change in the variety under distribution was made and approved by the Indian Central Cotton Committee further continuance of the scheme should be treated as a new seed distribution scheme and not as a renewal of the original scheme. Research schemes should be financed up to a period of ten years in full, subject to review at the end of 3rd, 5th and 8th year as at present. To justify further financial help after ten years special technical or scientific reasons are necessary. This is all the more necessary if the Committee's share is to exceed 50 per cent of the total expenditure to which it should normally be limited. It was agreed that any scheme affected in the immediate future should be fully financed by the Committee for one full year more to enable the Director of Agriculture concerned to obtain the necessary finance from his Government for the subsequent years.

APPENDIX IV

LIST OF RESOLUTIONS

The Indian Central Cotton Committee urges the East India Cotton Association Ltd. to take steps to broaden the Broach Hedge Contract in such a way as to make it a safer hedge for more good quality Indian stapled cotton and thereby prevent cotton growers being subjected to unavoidable losses by manipulations in the Bombay market

The Indian Central Cotton Committee notes with pleasure that the Government of the United Provinces have agreed to prohibit the export of cotton seed and kapas from the United Provinces to any foreign country

The Indian Central Cotton Committee notes with pleasure that the Government of the United Provinces have agreed to prohibit the export of cotton seed and kapas from the United Provinces to any foreign country and that both the cotton growers and the cotton trade in the United Provinces will benefit

The Indian Central Cotton Committee notes with pleasure that the Government of the United Provinces have agreed to prohibit the export of cotton seed and kapas from the United Provinces to any foreign country

The Indian Central Cotton Committee notes with pleasure that the Government of the United Provinces have agreed to prohibit the export of cotton seed and kapas from the United Provinces to any foreign country

The Indian Central Cotton Committee notes with pleasure that the Kutch Darbar has agreed to co operate in prohibiting the import into the Kutch State of all foreign cotton seed and kapas. The Committee trusts that those maritime States who have not yet signified their agreement with the policy will also fall in line at no distant date

The Indian Central Cotton Committee records its thanks to the Jhalawar Darbar for the very thorough enquiry undertaken by them to ascertain the extent to which outside cotton is imported into the State and trusts that no time will be lost in adopting legislative measures to prevent such imports if and when found necessary

The Indian Central Cotton Committee places on record its appreciation of the action of the Government of the Central Provinces in passing the Central Provinces Cotton Control Act which has for its object the eradication of Garrow Hill cotton. The Committee has no doubt that the suppression of this cotton is in the best interests of the growers of better quality cotton in the provinces and trusts that early steps will be taken to frame the required rules under the Act and apply them where necessary

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APPENDIX IV.

LIST OF RESOLUTIONS

"That the Indian Central Cotton Committee places on record its satisfaction that the market "

"That the Indian Central Cotton Committee places on record its satisfaction that the "

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"The Indian Central Cotton Committee notes with pleasure that the Kutch Darbar has agreed to co operate in prohibiting the import into the Kutch State of all foreign cotton seed and kapas. The Committee trusts that those maritime States who have not yet signified their agreement with the policy will also fall in line at no distant date "

"The Indian Central Cotton Committee records its thanks to the Jhalawar Darbar for the very thorough enquiry undertaken by them to ascertain the extent to which outside cotton is imported into the State and trusts that no time will be lost in adopting legislative measures to prevent such imports, if and when found necessary."

"The Indian Central Cotton Committee places on record its appreciation of the action of the Government of the Central Provinces in passing the Central Provinces Cotton Control Act which has for its object the eradication of Garrow Hill cotton. The Com-

The Indian Central Cotton Committee welcomes the action of the Bhopal Darbar in taking steps to introduce legislation for the cultivation of superior cotton in the State."

"This Conference agrees that the breeding of strains immune to wilt under optimum conditions is the ideal to aim at. For agricultural distribution, resistance of the order of 95 per cent under heavily infected field conditions is satisfactory, provided that the strain has been tested and shown to be practically homozygous for that degree of resistance to wilt.

The Conference recommends that

- (1) tests for homozygosity should be applied before a resistant strain is released for distribution,
 - (2) the Pathologist should also conduct tests for homozygosity and need only select in material shown to be heterozygous,
 - (3) the conditions under which field tests are being carried out should be described and standardised as far as is practicable."
-

APPENDIX V.

CENTRAL PROVINCES ACT No XX OF 1937—THE CENTRAL PROVINCES COTTON CONTROL ACT, 1937.

[Published in the *Central Provinces Gazette*, dated the 12th February, 1937.]

An Act to provide for the prohibition of the cultivation of Garrowhull cotton (*Gossypium cernuum*) in the Central Provinces.

Preamble—Whereas it is expedient that the cultivation of Garrowhull cotton in the Central Provinces should be prohibited; and whereas the Governor General has been pleased to sanction the passing of this Act for that purpose;

And whereas the previous sanction of the Governor General required under sub-section (3) of section 80 A of the Government of India Act has been obtained to the passing of this Act,

It is hereby enacted as follows—

1 *Short title, extent and commencement*—(1) This Act may be called the Central Provinces Cotton Control Act 1937.

(2) It extends to the whole of the Central Provinces.

(3) It shall come into force on such date as the Local Government may, by notification, appoint in this behalf.

2 *Definitions*—In this Act, unless there is anything repugnant in the subject or context—

(a) "cotton" includes cotton plant, ginned as well as unginned cotton, cotton waste and cotton seed,

(b) "notified area" means the local area specified in the notification issued under section 3, and

(c) "Garrowhull cotton" means the kind of cotton known as *Gossypium cernuum*.

4 *Penalty for knowing it likely*
vates Garrowhull c
other kind of cotton
may extend to tw
extend to fifty rupees

5 *Provision of notice*—(1) Any officer authorised in this behalf by the Local Government may, by notification, require any person who is known to him to be in possession of cotton, to produce the same to him, or to any other person authorised in this behalf by the Local Government, at any time between sunrise and sunset,—

(2) Any person who fails to comply with the requirements of the notification issued under sub-section (1) shall be liable to a fine not exceeding fifty rupees.

(b) enter upon or into any such land, building, vessel or place in which he knows or suspects that Garrowhill cotton or any cotton mixed with Garrowhill cotton cultivated in contravention of a notification issued under section 3 is kept and seize such cotton

(2) Every officer seizing any cotton under this section shall forthwith—

... the Magistrate having jurisdiction to try the ... ch cotton ... or place

(b) subject to such rules as the Local Government may make in this behalf forward such cotton to the nearest officer authorized by the Local Government to receive it for examination and report to the Director of Agriculture Central Provinces.

(3) The opinion of the authorized officer referred to in clause (b) of sub-section (2) contained in any document signed by such officer regarding the cotton sent to him for examination under that clause may be used as evidence as to the nature of such cotton in any inquiry, trial or proceeding under this Act

6 *Effect of non compliance with notice under section 5 (1) (a)*—If any occupier upon whom a notice has been served under clause (a) of sub section (1) of section 5 does not comply with such notice he shall be deemed to have committed an offence under section 4 and the officer referred to in sub section (1) of section 5 may take action under sub section (2) of that section at the cost of the occupier and such cost shall be recoverable as an arrear of land revenue

7 *Penalty for offence or person in charge of a vessel*—(1)

(2) Whoever commits a breach of the provisions of sub section (1) shall be punishable with fine which may extend to twenty rupees

9 *Magistrates who can try offences*—No offence made punishable by or under this Act shall be tried by any Court inferior to that of a Magistrate of the Second Class

10 *Suiting of acts done under this Act*—No suit prosecution or other legal proceedings shall lie against any person for anything in good faith done or intended to be done in pursuance or execution of this Act

11 *Power to make rules*—(1)—The Local Government may, after previous publication, make rules consistent with this Act generally for carrying out all or any of the purposes thereof

(2) In making any rule the Local Government may provide that a breach thereof shall be punishable with fine which may extend to twenty rupees

APPENDIX VI.

RULES UNDER THE COTTON GINNING AND PRESSING FACTORIES
(CENTRAL PROVINCES AMENDMENT) ACTGOVERNMENT OF THE C. P. AND BERAR,
COMMERCE AND INDUSTRY DEPARTMENT

NOTIFICATION

NAGPUR the 25th October 1937

No. 9580 9480 VII. In pursuance of the powers conferred by the Cotton

Amendments

- 1 After rule 6 the following rules shall be inserted namely —

PERIOD CONSTITUTING A SEASON

Section 13 (ab)

6A For the purposes of sections 2(1) and 5 the season shall commence on the 1st day of September in each year and terminate on the 30th day of June of the year following

AUTHORITY THE FORM THE CONDITIONS AND THE FEE FOR GRANTING A LICENCE

Section 13 (ac)

6B (1) The authority for granting a licence under sub section (1) of section 2A shall be the Director of Industries Central Provinces and Berar

(2) The licence shall be in Form F

(3) An application for the issue of a licence shall be in writing and shall be sent to the licensing authority by registered post so as to reach him

(4) The fee for a licence shall be ten rupees per annum. It shall be credited into a Government treasury and the chalan in token of its payment shall accompany the application

(5) In the event of a licence being lost a duplicate shall be issued by the Director of Industries Central Provinces and Berar, on payment of a fee of one rupee

THE PERMISSIBLE PROPORTION OF SEED IN GINNED COTTON

Section 13 (ae)

6C The proportion of seed both ginned and unginned shall not exceed 1 per cent of the weight of the cotton

CERTIFICATE REGARDING QUANTITY OF MOISTURE ETC

Section 13 (af)

6D The person authorised to give the certificate referred to in the explanation below section 3A shall be the Agricultural Chemist to Government, Central Provinces and Berar

THE EXAMINATION OF BALES

Section 13 (ag)

6E The person competent to examine cotton or the contents of a package or bale and to grant a certificate for the purposes of section 3B shall be the Agricultural Chemist to Government, Central Provinces and Berar

THE PROCEDURE FOR THE EXAMINATION OF BALES AND THE FEE FOR SUCH EXAMINATION.

Section 13 (a)

6F. (1) Every complaint shall be addressed to the Chief Inspector of Boilers and Factories on the grounds for the complaint. The complaint shall be accompanied by a fee of fifty rupees or bales in respect of which the complaint is made.

(2) The fee payable by the complainant shall be fifty rupees which shall be refunded if the complaint is found to be true or justified.

(3) Every such complaint shall be accompanied by a chalan showing that the prescribed fee has been credited into a Government treasury.

(4) If the complainant is not in possession of the cotton, package or bale in respect of which the contravention of the provisions of section 3A is alleged to have taken place the complaint shall be sent by registered post to the Chief Inspector of Boilers and Factories.

(5) If the complainant is in possession of the cotton, package or bale in respect of which the contravention of the provisions of section 3A is alleged to have taken place,

record of the examination shall be made at the same time, and the complaint shall be presented and dealt with.

SEALING OF THINGS SEIZED.

Section 13 (a).

6G. (1) The authorized officer shall enclose the things seized or retained in the special bag provided for the purpose and seal the bag with the special lead seals provided for the purpose in the presence of the owner or the person in charge of the factory or where these are not present in the presence of two witnesses.

(2) Where the offence that appears to have been committed is the watering of cotton, the cotton or a representative sample of it seized shall be divided into two halves, one by the Chief Inspector of Boilers and Factories and the other by the owner or the person in charge of the factory or where these are not present in the presence of two witnesses.

(3) The bags so sealed shall be labelled with a detachable label showing the name of the factory and such particulars and distinguishing marks as may be necessary for their identification. The bags shall be forwarded to the Chief Inspector of Boilers and Factories.

2. The Form B appended hereto shall be substituted for the Form B prescribed in rule 4.

3. Rule 16 shall be omitted and rules 17 and 18 shall be renumbered as rules 16 and 17.

7 or 8 years. During 1936-37 the Department distributed 33 450 lbs. of pure *Banilla* cotton seed.

Khandesh—The improved variety of cotton evolved by the Bombay Agricultural Department and named "Khandesh" is now being grown in the Khandesh tract. It yields 15 to 20 lbs. per acre and is highly resistant to wilt and suitable for Khandesh tract. It has been evolved by the selection of A P 56-3 and is now named *Khandesh*. This new cotton is the selection of A P 56-3 and is now named *Khandesh*. It has been launched together with the pure seed of *Banilla* and is now being given to the merchants also.

A seed distribution scheme of the Indian Central Cotton Committee is in operation in this district and under the Scheme an area of 10 000 acres was organised for the multiplication of pure seed. This scheme has been in operation for six years. It has been decided to close it down as a new cotton superior to *Banilla* in staple and highly resistant to wilt and suitable for Khandesh tract has been evolved. This new cotton is the selection of A P 56-3 and is now named *Khandesh*. It has been launched together with the pure seed of *Banilla* and is now being given to the merchants also.

Kumta Dharwar Tract—The work of introducing two improved varieties of cotton viz., *Jayawant* and *Gadag No 1* was carried out on an extensive scale through the local agents and the Gadag Cotton Sale Society. The *Jayawant* is at different places of the tract and the *Gadag No 1* is at different places of the tract. The *Jayawant* is at different places of the tract and the *Gadag No 1* is at different places of the tract.

For distribution of general ped gree seed stocked by the local agents and Cotton Sale Societies Seed-depôts were opened as usual in different selected centres and sub centres. The general area grown with pure seed was 75 711 acres excluding the area managed by the Cotton Sale Society and 61 796 acres. The estimate of the area is 137 507 acres and 8 441 lbs.

Jayawant cotton obtained on an average the premium of Rs 15 per naga of seed cotton (1 344 lbs.) in auction sales and *Gadag No 1* fetched Rs 20 more per naga.

Sind—During the decade prior to the opening of the Lloyd Barrage Canals, the area of cotton was increased slightly over 300 000 acres with an

Three main classes of cotton—Three main classes of cotton have been found to be successful in Sind viz (a) Sind *Deshi*, (b) Sind American, (c) Imported Egyptian and Sea Island cottons.

culture, Sind has better yield high rainfall cultivation in

Sind Deshi Cotton—This cotton has a special market of its own on account of its very hardy and can grow in low and d a

This improved *deshi* strain is now the standard *deshi* cotton in Sind. The total area under *deshi* cotton in 1936-37 was 420 801 acres (including Khairpur State) with an estimated outturn of 221,416 bales of cotton.

These are —

Sind American—4F 98.—It has a staple length of $\frac{1}{2}$ " to $\frac{1}{4}$ " and spins 34's. It has a ginning outturn of 33 per cent and gives a high yield. This improved strain has been found to be most suitable type for cultivation in the new cotton growing tracts being established on the right bank of the Indus. In fact, the bulk of the crop in these areas is 4 F98, cotton.

Sind Sudhar (289F 1) —This improved strain has full 1" staple and spins 40's. It

Improved Egyptian and Sea Island Cottons—Selected strains of these cottons, accli-

and want of adequate price. During 1936-37, these cottons were sold by the Agricultural Department in large quantities at the following rates:—

Variety	SALE OF COTTON IN 1936-37			REMARKS
	No of bales sold	Rate per candy (754 lbs.)	Premium on Broach	
SIND N. R.	3	Rs 262 1 2	Rs	Government Farm produce
	25	254 14 10		Do
	30	220 8 0		Do
4F 98	22	238 4 0		Do.
SIND SUDHAR	145	300 3 0		Government and 'A' class produce.
	100	286 10 6		Do.
	5	285 14 4		Do.
	22	259 15 9		Government and 'B' class produce.
	28	259 15 6		Do.
BOSS III 16	32	400 0 0	150 on 250	Government Farm material
	33	390 0 0	150 on 240	Government and 'A' class produce
	91	375 0 0	150 on 225	} District produce
	8	386 0 0	150 on 236	
	66	380 0 0	140 on 240	

For successful cultivation of long stapled and fine quality cottons, it is necessary to evolve a reliable method of selection which will give a high percentage of pure seed from the selected plants. The pure seed extension scheme is based on the selection of pure seed from the selected plants. The pure seed extension scheme is based on the selection of pure seed from the selected plants.

Extension and pure seed multiplication—The pure seed extension scheme is based on the selection of pure seed from the selected plants. The pure seed extension scheme is based on the selection of pure seed from the selected plants. It is proposed to increase the area under the pure seed extension scheme.

The produce of all the stages of the seed multiplication scheme was ginned under the supervision of the Agricultural Department and about 29,500 *maunds* of seed of improved strains evolved by the Agricultural Department were distributed for sowing in the current year 1937-38.

MADRAS—I The Southern Tract—(A) *Cambodia*—Coimbatore—(i) The system of multiplication of pure Co 2 *Cambodia* seed to *ryots* still continues as in previous years and much progress has been made in this direction. With a view to the spread of this strain seed farms are being run by annual contract with co operative seed societies and individual *ryots*. A statement showing seed farm areas under this strain during 1935 36 and 1936 37 is given below —

Year	No of societies	No of <i>ryots</i>	Taluk where seed farms were run	Area in acres		Quantity of lint obtained		Quantity of seed distributed
				Acs	cents	Candies.	lbs.	Lbs
1935 36 (Inner area)	4	130	Palladam	883	0	53	54	78 440
1935 36 (Outer area)	21	801	Palladam & Avanashi	5 320	0	861	292	903 854
Total	25	931		6 203	0	914	346	982 294
1936 37 (Inner area)	4	61	Palladam	926	0	101	166	146 863*
1936 37 (Outer area)	23	765	Palladam & Avanashi	6 117	23	641	124	871 318
Total	27	826		6 043	23	742	290	1 018 181

* Quantity of seed produced for distribution

(ii) The inner area mentioned above is run under the direct supervision of the department whereas the outer area is run by the Tiruppur Co operative Trading Society

(iii) The estimated area under Co 2 *Cambodia* and the production are given in the statement below —

	Area in acres	Yield in bales of 400 lbs
Coimbatore District	116 452	6 163
Salem District	20 687	9 309
	137 139	15 472

(iv) The seed farm lint was sold on different dates and an average premium of Rs. 6 per candy was obtained on the dates of sale. There is a gradual reduction in premium and it is due to the high quality of lint that is being marketed owing to the large distribution of pure Co 2 seed both by the Department and by other agencies in the past few years.

2 *Cambodia—Trichinopoly*—There were no seed farms in the Trichinopoly District. The seed supply having been limited the area under Co 2 was reduced from 6 090 acres in the previous year to 5 207 acres (including a natural spread area of about 3,290 acres) in the year under report.

3 *Cambodia—Madura*—The area under Co 2 strain Nos 920 and 1267 *Cambodia* seed farms was 221 acres as against 172 acres in the previous year. The quantity of seed distributed during the year was as detailed below, sufficient to cover an area of 4,730 acres as compared to 31 047 lbs of seed for 2 079 acres during 1935-36.—

Co 2	65,751 lbs
Strain 1267	3,365 "
Strain 920	1,844 "
Total	<hr/> 70,960 "

The estimated area under these improved varieties as a result of departmental distribution and other agencies is 41,240 acres (Co 2=40 461 acres Strain 1267=267 acres and Strain 920=512 acres) Cambodia in the Masipattam (February April) season in the single crop paddy lands continues to be popular

Cambridge & Oxford Dictionaries Online

B I Karunganni—Coimbatore—(s) The C7 Karunganni strain of Tinnevely tract has become very popular in Coimbatore district with a corresponding reduction in the Uppam area. A statement showing the seed farm areas under this strain during 1935-36 and 1936-37 is given below—

Year	No of <i>ryots</i>	Taluk where seed farms were run	Area in acres	Quantity of lint obtained	Quantity of seed distributed
			Acres cents.	lbs	lbs
1935 36	19	Udamalpet	542 39	25,589	58,128
1936 37	21	"	848 0	27,493	94,364*

* Quantity produced for distribution

(ii) The area estimated under this strain from both departmental and ryots seed is 29 105 acres (Coimbatore district 29 092 Salem district 13) The estimated yield from this area is 5 874 bales of 400 lbs each)

2 Karunganni—South—(i) The area under Karunganni seed farms—A 10 and A.P.T. 1—was 1,098 acres whereas it was 1,202 acres in the previous year K.P.T. 1 is

admitted to be a better yielder than A 10 or C 7. The two latter varieties will be completely replaced by KPT.1 soon. The quantity of seed distributed was 1—

A 10	.	.	21,725	lbs
KPT 1	.	.	67,798	"
Strain 546	..	..	225	"
U 7	..	..	8,088	"
			<hr/>	
Total			88,736	"

which was sufficient for an area of 7,395 acres as compared to the distribution in 1915 of 181,093 lbs. of seed to cover 15,141 acres. The estimated area under the improved strains is 130,875 acres (A 10=81,005 acres, O 7=39,775 acres, RPT 1=13,320 acres, and Strain 540=775 acres)

1911年 12月 1日 星期一 晴
 1911年 12月 2日 星期二 晴
 1911年 12月 3日 星期三 晴
 1911年 12月 4日 星期四 晴
 1911年 12月 5日 星期五 晴
 1911年 12月 6日 星期六 晴
 1911年 12月 7日 星期日 晴
 1911年 12月 8日 星期一 晴
 1911年 12月 9日 星期二 晴
 1911年 12月 10日 星期三 晴
 1911年 12月 11日 星期四 晴
 1911年 12月 12日 星期五 晴
 1911年 12月 13日 星期六 晴
 1911年 12月 14日 星期日 晴
 1911年 12月 15日 星期一 晴
 1911年 12月 16日 星期二 晴
 1911年 12月 17日 星期三 晴
 1911年 12月 18日 星期四 晴
 1911年 12月 19日 星期五 晴
 1911年 12月 20日 星期六 晴
 1911年 12月 21日 星期日 晴
 1911年 12月 22日 星期一 晴
 1911年 12月 23日 星期二 晴
 1911年 12月 24日 星期三 晴
 1911年 12月 25日 星期四 晴
 1911年 12月 26日 星期五 晴
 1911年 12月 27日 星期六 晴
 1911年 12月 28日 星期日 晴
 1911年 12月 29日 星期一 晴
 1911年 12月 30日 星期二 晴
 1911年 12月 31日 星期三 晴

(ii) Owing to insufficient rainfall in the Trichinopoly district the area under C 7 Korungul in this district was reduced from 695 acres in 1935-36 to 485 acres in the year under report.

11 Northern and Western Tract—A Northern—(N, 14)—On recovery of prices a good demand has been created for this cotton since 1935-36. Good farms were started with a view to supply pure seed to the *spots*. The work already received an impetus by the premium of Rs. 10 per candy of 500 lbs lint paid by Messrs. Hanny & Co., Nondyal, for the produce of the 1935-36 crop.

During 1916-17 all the seed obtained from the 1915-16 seed farm area viz., 12,710 lbs. was sold. Seed farm work was continued and an area of 78.8 acres was devoted for this purpose. The average outturn of seed cotton was low owing to the bad season, being only 127 lbs. per acre. In Kolkuntla taluk (Kurnool District) the yield was 200 lbs. of seed cotton per acre. It is gratifying to record that Messrs. Binny & Co., Nandyal the main cotton buying firm in the tract, continued to pay a premium of Rs. 30 per candy of 500 lbs. lint.

The area under natural spread under N 14 during 1916-37 was 3,025 acres. During 1937-38 it is expected that the area might go up to 6,000 acres.

It was found that the area was approximately 2,800
acres. The area was also found to be approximately 2,800
acres. The area was also found to be approximately 2,800
acres.

Owing to bad season, the yield was below normal, the average yield per acre being 25 lbs. of lint in the Bellary District and 35 lbs. of lint in the Anantapur District. This variety fetched a premium of Rs. 4 per bale of 400 lbs. lint while in the previous year the premium paid ranged from Rs. 3 to Rs. 7.

CENTRAL PROVINCES AND ILERAN—The past year witnessed a further extension in the cultivation of F 434 cotton. The progress of this strain was carefully watched in the field and records of its performance were kept. The following table shows the results of the experiments conducted in the field during the past year.

of its burst bolls to withstand heat rays and with a spinning capacity of four years. In the has almost complete headway in the removal of seed cotton. Marketing of 53,537 lbs. of seed cotton has been distributed.

Late *Verum* was again tested in areas for which it has been specially developed and the results obtained were in keeping with those of the previous years. But owing to the all round suitability of F 434 and the desirability of having as few types as possible under cultivation in adjacent areas, it is recommended that except in places where late *Verum* shows a distinct advantage over F 434, the latter type is the one that should be grown.

Bur At Special and *Bur* 107 have been in the for the

Another feature of the year was the development to the field scale stage of four new strains of cotton viz. B 60, B 64, B 73 and B 61. These combine fineness of lint with high yield and freedom from disease. In spinning capacity, they have been adjudged suitable for spinning from 46 to 50 highest standard warp counts.

UNITED PROVINCES.—The U P *Bengals* crop was a failure, heavy and badly distributed rain resulting in low yield, bad condition, and a high proportion of bad seed.

C 402—The year Pur

C 520—Over 17,000 acres of this hardy, high ginning *Bengals* selection were grown in the western districts and about 1,000 acres in the Sarda Circle.

Cotton Survey.—The survey, supported by the Indian Central Cotton Committee, of the indigenous cottons of the Bundelkhand and Rohilkhand areas was completed, and considerable progress made in selection of material for trial.

PUNJAB.—The year 1936-37 1,361,042 acres of Desi cottons B

The whole of the area under Punjab-American cotton is grown under varieties in amongst improved Punjab American cottons on a commercial scale in the latter's seed characters, but as become extremely popular, at Colonies, in spite of the fact that it is a late cotton and requires a late irrigation if the best results are to be obtained.

It is estimated that the area sown under this variety at the end of the year 1936-37 was not less than 1,50,000 acres. Again the new early strain of *Punjab American* cotton, 43 *F* evolved by the Department and approved for issue 3 years ago, has gained great popularity in the northern part of the Lower Bari Doab Colony and on inundation supply canals. It is believed that the area sown under this variety at the moment is not less than one lakh acres. The area under *K T 25*—a selection of 289 *F* made by the British Cotton Growing Association, Khanewal, is increasing annually.

	Estimated
variety	7
	6
	2

variety

2 With a view to avoid any deterioration in the crop that might arise by using seed for more than two years from the local crop, during the year under report, the supply of the best quality of Navsari seed (also 1027 *A L F* variety) was obtained through the

cotton crop throughout the Province of Gujarat

4 The introduction of the Cotton Improvement Act and the policy of the State in relation to the growing of cotton have stimulated also the growth of meetings for the sale of cotton to the highest priced customers at the various agricultural centres in the State

the season

HARODA STATE.—(1) *Navsari District*—Based on seed issued from the Departmental organisation the area under 1027 *A L F* is about 76,000 acres. The State has now its

own cotton farm in the district and the organisation for seed is almost perfected. A larger area would be under this type if the premium paid was commensurate with its general lower yield and lower ginning percentage compared with degenerate growths of A 1. The introduction of the Goghari Cotton Control Act together with propaganda is certainly reducing the percentage of this in the cultivators' fields.

(2) *Baroda District*—B 9 cotton is still being issued in areas free from wilt. B D 8, the wilt resistant cotton, was extensively demonstrated last year and arrangements are made for seed supply and its concentrated development in certain zones. The area of B 9 is probably about 1,500 acres.

(3) *Mehsana District*—Wagad 8 is at present our most hopeful cotton and arrangements are being made to establish a reliable seed supply. Two of the new segregates for *Varamgam* are on trial. The Jagudan farm is now linked with this station in the Indian Central Cotton Committee Dholleras Improvement Scheme.

(4) *Amreli District*—It cannot be said that the department has anything to offer the cultivators on which it can itself rely. The intensive studies of the *Mathia* cotton is now being taken up at the Amreli Farm.

HYDERABAD STATE—The system of distribution of good cotton seed on *tacari* was continued, as usual. Distribution was made of seed of the following different varieties in the various localities:

Gaorani tract—The area under the ordinary local seed is being reduced gradually as the area under the improved type increases. The area under the improved type is now about 1,400 acres, and the area under the ordinary local seed is about 1,600 acres.

Aurangabad District—Distribution of *Banilla* seed was continued with the object to replace the local mixture, and 77,220 lbs. of seed was distributed for about 4,290 acres. Seed of an improved American type, *Parbhani-American No. 1*, amounting to 7,300 lbs. sufficient for about 405 acres, was also distributed.

Parbhani District—Distribution of *Verum* seed was discontinued, in favour of a more promising selection of *Gaorani*. Seed of *Gaorani No. 12*, amounting to 21,044 lbs., was distributed sufficient for about 1,169 acres.

Raichur District—Distribution of seed of improved types was continued with a view to replace the local inferior types of *Kumtia* and *Dharwar American*. Seed of *Jayawant*, amounting to 3,26,528 lbs. sufficient for about 3,26,500 acres and of *Gadag No. 1*, amounting to 48,105 lbs. sufficient for about 4,800 acres, was distributed this year.

BALANCE SHEET AS AT 31st MARCH 1937—contd.

Receipts	Rs	a	p	Expenditure	Rs	a	p	Rs	a	p
Brought forward	1,32,90,404	12	0	Brought forward				30,61,617	11	0
				<i>D Printing and Propaganda—</i>						
				(1) Publicity and Propaganda	110,945	11	2			
				(2) Printing and Distribution	52,537	0	9			
				<i>E Statistical Research—</i>				1,67,982	11	11
				(1) Studies of village consumption of Indian cotton	22,442	5	2			
				(2) Improvement of cotton forecasts	14,604	15	3			
				<i>II Technological Research—</i>				37,047	2	5
				(1) <i>Technological Laboratory—</i>						
				<i>A Capital Expenditure —</i>						
				1 Land and Buildings	4,07,538	7	0			
				2 Machinery	96,690	8	10			
				3 Freight	7,502	2	8			
				4 Apparatus and equipment	41,538	3	7			
				5 Machinery Workshop	5,789	8	3			
				<i>B Working Expenses</i>	18,53,977	14	4			
				(2) Provincial	97,143	12	3			
				(3) Development of alternative uses for Indian cottons	5,262	3	11			
				<i>III Research Studentships</i>	2,58,943	8	6	25,15,460	10	10
				Less—Refunds from Mr Tashkir Ahmad	597	4	0	2,58,946	4	6
Carried over	1,32,90,404	12	0	Carried over				60,33,554	8	8

BALANCE SHEET AS AT 31st MARCH 1937—cont'd

Receipts	Rs. a p.		Expenditure	Rs. a p.		Rs. a p.
	Rs.	p.		Rs.	p.	
Brought forward	1,32,90,404	12 0		19,53,218	10 4	69,33,554 0 0
			VII Central Provinces— (a) Botan. cal. (b) Entomological	4,27,740	11 8	
			VIII United Provinces— (a) Pink Boll worm (b) Rob. hand and Doubleband Cotton Survey <i>Institute of Hand Industry Indus</i>	9,444	15 0	
			IX X XI XII	1,47,834	1 4	
			XIII XIV	15,382	19 4	
			XV XVI XVII XVIII XIX	15,44,943	12 0	
				2,54,213	13 11	
				2,04	15 8	
				47	50 3 9	
				2,37,662	14 1	
				37,041	0 4	
				45,873	13 11	
				42,904	19 4	
				34,444	14 10	
				4	41 3 3	
				2,400	0 0	
				5,904	11 8	
				9,444	7 0	
				3,442	5 0	
				3,104	13 4	
				342	13 4	
				1,237	0 0	
						41,00,704 1 4
				7,875	12 8	
				4,455	0 2	
						12,00,000 12 10
						3,441 4 0
						23,00,347 1 0
Grand Total	1,32,90,404	12 0	Grand Total			1,32,90,404 12 0

By suspense account
By closing balance

BALANCE SHEET AS AT 31st MARCH 1937

President Fund Account

Receipts	Rs a p	Rs a p	EXPENDITURE	Rs a p	Rs a p
Subscribers contributions Account	2 31 877 10 1		By Advance to subscribers	41 363 15 0	
Less—Payments made to subscribers resigned	46 8 11 11	1 83 00 14 2	Less—Recoveries made up to 31st March 1937	37 661 12 0	3,702 3 0
Committee's contributions	2 26 720 8 10		Accrued interest on Government Paper upto 31st March 1937 credited to subscribers for distribution		3 980 0 10
Less—Payments to subscribers resigned and forfeitures for Committee's contributions disallowed	44 502 11 2	1 82 217 13 8			
Surplus Deposit of Mr Dutt's own contribution		1 085 14 1			
Investment Fluctuation Account		26 205 1 0	By Balance		3 88 859 1 2
Lapse and Forfeiture Account		2 026 9 8			
Surplus Receipts—Indian Cotton Committee Account (since adjusted)		1 000 0 0			
Total		3 97 541 5 0	Total		3 97,541 5 0

RECEIPTS	Rs	a	p	Rs	a	p	EXPENDITURE	Rs	a	p	Rs	a	p
Opening Balance	25 24	131	9	1			Administration of the Commission (including Improvement of Cotton Market and Distribution and Extension Printing and Propaganda Statistical Research and Travelling Allowance of Non official Members)				379 860	9	0
Less—Returns to Director of Agriculture							Agricultural Research Grants in Aid				485 855	3	6
Monies received from other sources and interest on investments							Technological Research				1 91 400	15	1
Less—Receipts in 1935-36							Closing Balance (Government Paper at Cost) —						
Receipts under Section 12 of the Indian Cotton Cess Act 1923							31% Government of India Loan 1947-50 of the Face Value of Rs. 2,75,000				2 18 032	13	0
Other Receipts							34% Government of India Loan 1960-70 of the Face Value of Rs. 8,08,900				6 92 896	12	10
Interest on Investments							41% Government of India Loan 1955-60 of the Face Value of Rs. 26,000				25 004	0	0
							5% Government of India Loan 1939-44 of the Face Value of Rs. 1,89,000				1 67 057	15	6
							5% Government of India Loan 1940-43 of the Face Value of Rs. 3,60,000				3 98 362	8	0
							6% Bombay Municipal Bonds 1951 of the Face Value of Rs. 50,000				58 500	0	0
							6% Karachi Port Trust Coupon Debentures 1953 of the Face Value of Rs. 1,50,000				1 41 212	8	0
							6% Rangoon Municipal Debentures 1956 of the Face Value of Rs. 3,83,500				4 15 328	2	10
							31% Indian Sterling Bearer Bonds of the Face Value of Rs. 2,20,000				2 20 688	14	10
							(Market Value on 31st March 1937 Rs. 27,54,322.30)				23 35 183	10	2
							Imperial Bank of India Current Account				41 526	15	10
							Imprests —						
							Committee's Accounts as certified by the Secretary				Rs. a p		
							Technological Laboratory as certified by the Director				1 50 0	0	0
							Director of Agriculture Bombay Presidency as certified by the Director of Agriculture Bombay Presidency				500	0	0
							Director of Agriculture Punjab for Cotton Research				1 365	0	0
							Botanist Lyallpur as certified by the Cotton Research Station Lyallpur				150	0	0
							Plant Physiologist Punjab as certified by the Plant Physiologist Punjab				100	0	0
							Undisbursed pay of peons of the Indian Central Cotton Committee Office				21	7	0
							Supplies (Recoverable)				3 038	7	0
							Loans Recoverable (but considered doubtful)				3 641	4	0
							Total Closing Balance				12 083	12	10
							Total				23 98 072	1	10
											34 47 188	13	5

14% Government of India Loan 1960-70 of the Face Value of Rs. 116,900 has been deposited with the Imperial Bank of India for security against an overdraft that may be required by the Committee.

§ 1 of the H. R. 829120 on account of provision for Sinking Fund.

We have read and the above Statement of Receipts and Payments of the Indian Central Cotton Committee with the Books Vouchers and certified Returns of the Comtee and I have obtained all the information and explanations we have required and certify that to the best of our information and explanations received, the above statement is a correct abstract of the figures appearing in the Books and is drawn up in conformity with the Rules under the Indian Cotton Cess Act 1923.

W. W. W. 31st May 1937

(SA) S. B. BILLIMORIA & Co
Registered Accountants Auditors

PROVIDENT FUND ACCOUNT AS AT 31st MARCH 1937

PROVIDENT FUND ACCOUNT AS AT 31st MARCH 1957

RECEIPTS	Ra	a	P	Ra	a	P
To Opening Balance as on 1st April 1956	Ra					
3,24,381 4 4						
Less—Payments made during the year to a subscriber who resigned in 1953-56	23	0	4			
To Subscribers Contributions	28,591	6	0			
Add—Recovery against advances	5,044	2	0			
Less—Refunds to Subscribers who have resigned	568	11	4			
Advances to Subscribers	5,107	13	0			
Committee's Contribution received from Indian Central Cotton Committee at 100 per cent.	3,81,739	3	8			
Less—Payments to Subscribers who have resigned including transfers to Large and Forfeiture Accounts for contributions swallowed	28,381	6	0			
To Interest received on Investments	3,90,150	9	8			
Interest received on Advances to Subscribers	845	6	0			
Refunds of Income tax deducted on Interest received during 1953-56	12,716	15	0			
Less—Interest paid during the year to Subscribers who have resigned —	149	13	0			
On their own contributions	138	1	0			
On Committee's Contributions	13,004	15	0			
Interest received on Advances at the time of purchase of Government Securities (since received)	463	11	6			
Income tax deducted from Interest on Investments (Recoverable)	292	8	2			
Bank's contribution for collection of interest and cost of stamps	34	10	0			
Cost of Stationery etc	30	12	0			
Large and Forfeiture Accounts (including an Central Cotton Committee's Account. From recovery of Committee's Contributions (since adjusted)	12,170	8	10			
	134	10	16			
	1,000	0	0			
Total	4,02,630	7	2			

* Includes Rs. 1085.14 being Suspense Deposit with interest thereon of Mr. Dutt's own contribution

Examined and found correct

(Sd) S D BELLAMONIA & Co
Registered Accountants Auditors

LLYNORIA & CO
Registered Accountants Auditors

STATEMENT SHOWING EXPENDITURE UNDER THE SCHEME AND THE EXTENSION SCHEME UP TO 31st MARCH 1937

Major Head	Total amount granted	Period	Date of start- ing of the scheme	Expenditure from Capital		Expenditure from Revenue		Remarks	
				(a) Land and buildings	(b) Machinery and equipment	(c) Salaries and wages	(d) Other		
11 Technical assistance— (1) Technical assistance (2) Technical assistance (3) Technical assistance (4) Technical assistance (5) Technical assistance	5,71,900 3 6 18,53,215 0 0 6,151 0 0 81,421 5 5 40,000 0 0	3 yrs. Mths. Permanent	1923 Jan. 1924 April 1924	Rs. p. 4,07,500 7 0 1,50,223 9 0 1,218 11 0 5,422 7 0	Rs. p. 1,50,223 9 0 1,218 11 0 5,422 7 0	Rs. p. 1,50,223 9 0 1,218 11 0 5,422 7 0	Rs. p. 1,50,223 9 0 1,218 11 0 5,422 7 0	Rs. p. 1,50,223 9 0 1,218 11 0 5,422 7 0	Rs. p. 1,50,223 9 0 1,218 11 0 5,422 7 0
12 Technical assistance— (1) Technical assistance (2) Technical assistance (3) Technical assistance (4) Technical assistance (5) Technical assistance	2,91,445 0 0	10 11	Sept 1923	Rs. p. 2,40,944 2 11					
13 Technical assistance— (1) Technical assistance (2) Technical assistance (3) Technical assistance (4) Technical assistance (5) Technical assistance	1,00,000 0 0 2,400 0 0 1,00,000 0 0 1,00,000 0 0 1,00,000 0 0	7 7 0 4 4 0 4 0 4 0	Sept 1923 July 1923 1st April 1923 1st April 1923 1st April 1923	Rs. p. 1,14,000 9 7 2,315 9 0 91,460 9 2 8,897 0 0 1,82,836 4 11					
14 Technical assistance— (1) Technical assistance (2) Technical assistance (3) Technical assistance (4) Technical assistance (5) Technical assistance	1,00,000 0 0 2,400 0 0 1,00,000 0 0 1,00,000 0 0 1,00,000 0 0	7 7 0 4 4 0 4 0 4 0	Sept 1923 July 1923 1st April 1923 1st April 1923 1st April 1923	Rs. p. 1,14,000 9 7 2,315 9 0 91,460 9 2 8,897 0 0 1,82,836 4 11					
15 Technical assistance— (1) Technical assistance (2) Technical assistance (3) Technical assistance (4) Technical assistance (5) Technical assistance	1,00,000 0 0 2,400 0 0 1,00,000 0 0 1,00,000 0 0 1,00,000 0 0	7 7 0 4 4 0 4 0 4 0	Sept 1923 July 1923 1st April 1923 1st April 1923 1st April 1923	Rs. p. 1,14,000 9 7 2,315 9 0 91,460 9 2 8,897 0 0 1,82,836 4 11					

PROVIDENT FUND ACCOUNT AS AT 31st MARCH 1937

[illegible]

* Includes Rs. 1,085-14-1 being Suspense Deposit with interest thereon of Mr. Dutt's own contribution
Examined and found correct

STATEMENT SHOWING EXPENDITURE UNDER RESEARCH AND SRI ED EXTENSION SCHEMES UP TO 31st MARCH 1957

Major Heads.	Total sanctioned grant	Period	Date of start- ing of the scheme	Total expendi- ture upto 31st March 1957		Expenditure from Capital (a) (b)		Expenditure from Annual Appropriations (c) (d)		Remarks
				Rs	p	Rs	p	Rs	p	
1	2	3	4	5	6	7	8	9	10	
RESEARCH SCHEMES										
II. Zoological Research—										
(1) Technological Laboratory—		1 yr. Mths.	1953	5,49,076	12 4	4,07,000	7 0	1,42,076	5 4	
(a) Capital Expenditure	871,999	3 8		18,53,977	14 4			18,53,977	14 4	
(b) Working Expenses	19,83,822	15 7	Jan 1954	9,71,115	12 3			9,71,115	12 3	
(c) Working Expenses—Capital	6,151	0 0	April 1953							
(2) Provincial—Capital	91,621	5 3								
(3) Development of alternative uses for Indian cottons	30,000	0 0		3,272	3 11					
AGRICULTURAL RESEARCH GRANTS										
IV. Bombay Scheme—										
(1) Survey, Physiological and Writing up	2,91,445	0 0	10 11	2,50,544	2 11					
(2) (a) Surst Bollworm	1,20,720	0 0	7 7	1,14,409	9 -					
(b) Surst Bollworm Writing up				2,315	3 0					
(c) Surst Bollworm Propa- ganda and Clean up	2,420	0 0	0 4	91,469	9 2					
(d) Plant Puller Propaganda Scheme in Surst and Breach Districts	1,28,764	0 0	4 0	8,897	0 0					
(3) Dharwar—										
(a) Wild and Cotton Breeding	2,63,545	0 0	8 11	1,82,838	4 11					
(b) Writing up	11,855	0 0	0 10	10,902	10 3					
(4) Khandesh Cotton Breeding	27,895	0 0	5 5	26,573	5 0					
(5) Co-ordination of Cotton Re- search	23,981	0 0	Not started	1,749	7 6					

STATEMENT SHOWING EXPENDITURE UNDLR RESEARCH AND SELL EXTENSION SCHEMES UP TO 31st MARCH 1937—contd

Major Heads.	Total sanctioned grant	Period	Date of starting of the scheme.	Total expenditure upto 31st March 1937	Expenditure from Capital grants on		Expenditure from annual grants on apparatus and equipment of a permanent or semi permanent nature	Net working expenses of staff, field experiments, means, labouratory and field control agencies included petty apparatus.	REMARKS.
					(a)	(b)			
					Land and Buildings	Machinery apparatus and other movable property			
1	2	3	4	5	6	7	8	9	10
AGRICULTURAL RESEARCH GRANTS—(contd)									
19. Bombay Scheme—(contd)									
(a) Jalisco Cotton breeding	Rs. a p	Yrs. Mths.	1st April 1932	39,855 14 9	Rs. a p	Rs. a p	Rs. a p	Rs. a p	Provisional figures.
(b) French Cotton Breeding	26,061 0 0	10 0	1st April 1932	46,258 15 6			*4,175 5 9	*33,680 9 0	Provisional figures.
(c) Survey of Small Leaf Disease of cotton	1,20,810 0 0	10 0	1st April 1932	3,938 9 6			*6,232 2 6	*40,006 13 0	Provisional figures.
(d) Survey of Gochari cotton in Gujarat	5,118 0 0	1 0	6th Nov 1933	2,251 7 0			495 2 6	3,443 7 0	Scheme closed down on 31st October 1934.
(e) Defoliation of cotton seed—Recurring	5,000 0 0	5 0	16th Jan 1935	5,443 13 3			33 6 1	2,251 7 0	
(f) Breeding of With resistant cottons for Surat area	3,250 0 0	3 0	1st Feb 1936	355 0 0				1,715 4 4	
(g) Cotton Wilt Breeding Scheme	3,700 0 0	5 7	1st April 1937			3,697 2 10		355 0 0	
(h) Inclusion of Norboms and Westerns in Dry Farming Scheme at Hapur	14,385 0 0	5 0	1st April 1937						
(i) Westerns in Dry Farming Scheme at Hapur	42,350 0 0	5 0	1st April 1937						
(j) Westerns in Dry Farming Scheme at Hapur	1,780 0 0	1 0	1st June 1937						
Wages—									
(a) Herbaceous	1,47,068 0 0	14 6	Dec 1923	1,92,334 14 6			4,431 7 0	1,27,903 7 6	
(b) Fibrous and Physiological	2,12,779 0 0	7 0	16th Sept 1931	1,12,472 6 11			8,029 12 8	1,04,442 10 3	
(c) Fodder Crops—									
(i) Capital	900 0 0	6 5	14th Jan 1931	18,331 1 4		881 11 7	298 14 10	17,170 6 11	Scheme closed down on 14th June 1937.
(ii) Recurring	21,010 0 0						411 12 9	8,889 11 2	
(d) Nadam Cotton Breeding	19,730 0 0	2 0	14th June 1933	9,301 7 11					
(e) Improvement of Mungara cotton	23,534 0 0	5 0							
7. Punjab—									
(a) Details—									
(i) Capital	31,320 0 0	14 71	13th Aug 1923	4,97,170 15 4	22,158 0 0	9,102 11 0	34,915 10 9	4,30,994 9 7	*Rs 2,030 transferred to Capital from Working grant
(ii) Working expenses	*8,85,650 0 0								
(b) Entomological—									
(i) Capital	6,000 0 0	11 11	4th May 1926	2,18,653 15 9		5,826 3 10	10,051 15 2	2,00,775 12 9	
(ii) Working expenses	2,49,646 0 0								
(iii) (Work and -spotted Boll worms)									

STATEMENT SHOWING EXPENDITURE UNDER RESEARCH AND SEED EXTENSION SCHEMES UP TO 31st MARCH 1937—contd

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STATEMENT SHOWING EXPENDITURE UNDER RESEARCH AND SEED EXTENSION SCHEMES UP TO 31st MARCH 1937—contd

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STATEMENT SHOWING THE EXPENDITURE ON THE

Major Head.	Total sanctioned grant	Period	Date of start of the scheme	Total expenditure upto 31st March 1937	Expenditure from Capital Grants on			Expenditure from annual grants on apparatus and equipment of a permanent or semi permanent nature	Net working expenses for staff field experiments labour stores laboratory and field contingencies including petty apparatus	REMARKS
							Machinery apparatus and other movable property			
					(a)	(b)				
SCHEMES—contd.										
					(a)	(b)				
RESEARCH										
	Rs. a. p.	Yrs. Mths.		Rs. a. p.	Rs. a. p.	Rs. a. p.		Rs. a. p.	Rs. a. p.	
X. Seed—										
(1) Physiological	2,74 316 0 0	9 9	10th July 1927	2 54 213 13 11				18 912 15 9	Rs. a. p. 2 35 900 14 2	
XI. Broom—										
(a) Capital	3,000 0 0			2 908 15 5						
(b) Cotton Improvement	49 032 0 0	6 0	1st April 1931	47 790 3 9		2 908 15 5		4 234 5 0	43 555 14 9	Scheme closed down on 31st March 1937
XII. Hyderabad—										
(a) Recanal	3 65 092 0 0	9 11	10th May 1929	2 37 662 14 1				@17 461 15 10	@2 20 200 14 2	@Provisional figures.
(b) Cotton Survey	39 165 0 0	5 0	29th June 1931	37 981 0 4				187 11 10	37 773 4 6	Scheme closed down on 27th June 1935.
(c) Pink and Spotted Boll worm and Clean up Campaign	52 025 0 0	3 4	1st June 1933	45 873 13 1				655 15 10	45 217 13 9	*Subject to Government of India sanction
	90 959 0 0	9 0								
(d) Improvement of Kumbha Cotton	22 542 0 0	5 0	28th Nov 1937							
(e) Indian of Northern and Western in Dry Farming Scheme at Raichur	390 0 0	1 0	1st Sept 1937							
XIII. Bikaner—Bengala Cotton Improvement—										
(a) Capital	14 500 0 0		1st Jan. 1931	42 998 15 4	3 584 6 9	3 887 13 9		1 130 4 6	29 396 6 4	
(b) Working Expenses	65,370 0 0	10 0								
XIV. Baroda—										
(a) Root Rot—	4 000 0 0		1st Feb 1932	56 838 14 10	4 000 0 0			4 049 15 2	48 838 15 8	
(b) Recurring Expenses	91 569 0 0	10 4	15th April 1937	4 251 5 3				145 11 6	4 103 9 9	Scheme closed down on 15th June 1935.
(c) Comparative tests of 1027 and 1A cottons	4 780 0 0	2								
(d) Survey of Geshari Cotton	5 000 0 0	5 0	1st Feb 1935	2 500 0 0					12 500 0 0	Provisional figure
(e) Hunt Fuller Propaganda	12 630 0 0	2 0	1st Jan 1936	5 909 11 8					5 909 11 8	Subject to Government of India sanction.
(f) Bengal Comilla Cotton	17 578 0 0	12 0								
XV. Bengal Comilla Cotton	18,540 0 0	5 0	1st Dec 1934	9 566 7 9				861 3 6	8 705 4 3	
XVI. Mysore (Doddabathi) Cotton	8 442 0 0	3 0	1st Nov 1935	3 642 5 0					3 642 5 0	

STATEMENT SHOWING EXPENDITURE UNDER RESEARCH AND SFTD EXTENSION SCHEMES UP TO 31st MARCH 1937.—*concl'd*

STATEMENT SHOWING EXPENDITURE UNDER RESEARCH AND INVESTIGATION												
1	2	3	4	5		6		7		8	9	10
				Total sanctioned grant	Period	Date of start of the scheme	Total expenditure upto 31st March 1937	(a) Lands and Buildings	(b) Machinery apparatus and other movable property				Expenditure from annual grants on apparatus and equipment of permanent or semi-permanent nature	Net working expenses i.e. staff, field expenses, salaries, labour, etc., laboratory and field contingencies included partly apparatus	REMARKS
Majra Hissar.												
1 Bombay (cont.)	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
(a) Khasab (Jarda)	2,64,772 0 0	() 5 0	1st June 1936	23,418 3 2			293 7 0	23,154 12 2				(c) This grant is subject to the condition that the Bombay Government bears 25% of the net cost calculated after deducting total savings under the H. B. L. Gadag Athani Haveri and Ra. Bhogal schemes. Excludes anticipated receipts amounting to Rs. 6,500
(b) Maintenance of pure stock and work of improved varieties of cotton	2,660 0 0	Per annum	1st Sept. 1937	8,469 5 0			17 5 0	8,452 0 0				
(c) Pay and allowances of District Manager, Thripur	21,040 0 0	5 0	16th May 1931	24,038 1 2			162 4 0	23,875 13 2				(d) Closed down on 14th September 1937
(d) Co. 2	3,890 0 0	1 4	15th Sept. 1932	36,613 11 7			83 13 0	36,529 14 7				(e) Closed down on 17th August 1937
(e) H. 1	18,860 0 0	2 0	16th May 1935	3,952 2 9				3,952 2 9				(f) Closed down on 16th July 1934
(f) Paid for "Pure Cotton"	18,125 0 0			16,038 3 3			9,221 5 0	6,816 14 3				(g) The amount represents the Committee's share of the expenditure which is borne on a 50-50 basis between the Hyderabad State and the Committee. Annual Returns not yet received
(g) Seed	3,89,540 0 0	5 0	1st April 1931	2,43,404 12 1				6,435 0 9				(h) Annual Returns not yet received
(h) Main part of a pure stock (work of improved varieties of cotton)	2,500 0 0	Per annum										(i) Annual Returns not yet received
(i) Khasab (Jarda)	25,468 0 0	6 6	1st March 1930	33,167 12 1				73,544 2 5				(j) Annual Returns not yet received
(j) Khasab (Jarda)	125,798 0 0	4 6										(k) Annual Returns not yet received
(k) Khasab (Jarda)	1,17,940 0 0	3 8	1st Sept. 1930	73,544 2 5				73,544 2 5				(l) Annual Returns not yet received
(l) Khasab (Jarda)	2,18,819 0 0	5 21	1st April 1934	1,12,250 3 0				1,12,250 3 0				(m) Annual Returns not yet received
(m) Khasab (Jarda)	25,000 0 0	5 0	16th April 1934	8,990 6 5				8,972 14 5				(n) Annual Returns not yet received
(n) Khasab (Jarda)	45,900 0 0	5 0	1st May 1915	14,129 5 0				13,821 5 0				(o) Annual Returns not yet received
(o) Khasab (Jarda)												(p) Annual Returns not yet received

STATEMENT SHOWING EXPENDITURE UNDER RESEARCH AND SEED EXTENSION SCHEMES UP TO 31st MARCH 1937.—*could*

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APPENDIX X.

STOCKS OF INDIAN RAW COTTON HELD IN INDIA BY THE MILLS
AND THE TRADE ON 31st AUGUST, 1936 AND 1937.

(In thousand bales* of 400 lbs each)

Trade Descriptions of Cotton	TRADE STOCKS ON 31st AUGUST								Mill Stocks on 31st August		Total Indian Trade and Mill Stocks on 31st Aug	
	Bombay Island.		Karachi		Rest of India		Total India		Total India.		1938	1937
	1936	1937	1936	1937	1936	1937	1936	1937	1936	1937		
BENGALS—												
United Provinces	—	—	—	—	(a) 4	(a) 4	4	4	16	12	20	16
Punjab	—	—	19	35	(b) 5	(b) 6	24	41	12	20	36	61
Sind	—	—	6	10	(c) 2	—	8	10	3	4	11	14
Rajputana	—	—	2	2	—	—	2	2	15	12	17	14
Others (Unclassified)	19	38	—	—	—	—	19	38	1	3	20	41
Total	19	38	27	47	11	10	57	95	47	51	104	146
OMRAS—												
Central Provinces—Omras.	10	15	—	—	(d) 6	(d) 5	16	20	17	31	33	51
Berar Omras	6	38	—	—	(e) 12	(e) 9	18	47	9	15	27	62
Khandesh—Banilla	—	—	—	—	—	—	—	—	7	6	7	6
Khandesh Omras	10	29	—	—	(f) 2	(f) 2	12	31	6	9	18	40
Central India—Malvi	—	—	—	—	(g) 4	(g) 4	4	34	42	34	46	46
Central India—Others	15	37	—	—	(h) 11	(h) 28	26	65	10	13	36	78
Barr and Nagar Omras	6	28	—	—	(i) 27	(i) 45	33	73	5	6	38	79
Total	47	147	—	—	53	93	105	240	83	122	193	362
VERM	—	—	—	—	—	—	—	—	12	11	12	11
HYDERABAD GAOKANI	—	4	—	—	(k) 4	(k) 4	4	9	50	58	54	63
Total	—	4	—	—	4	5	4	9	62	67	66	76
AMERICANS—												
Punjab—239 F (and New Types)	28	2	—	1	(b) 1	—	29	3	16	25	45	28
Punjab (Unspecified—4 F)	7	1	64	35	(b) 10	(b) 26	81	62	89	86	170	148
Sind—239 F and F 1	24	9	18	—	—	—	42	9	15	14	57	23
Sind (Unspecified—4 F)	2	2	28	25	(b) 1	—	31	27	18	34	49	61
Dharwar (Gadag I)	—	—	—	—	—	—	—	—	4	3	4	3
Dharwar (Upland—Unspecified)	—	—	—	—	—	—	—	—	7	4	7	4
Cambodia (Coimbatore No 2)	—	—	—	—	—	—	—	—	62	48	62	48
Cambodia (Unspecified)	6	5	—	—	(i) 31	—	36	34	28	28	40	62
Total	67	19	110	61	12	57	189	137	245	240	434	377
BROACH—												
Surat Navsari (Surti)	61	29	—	—	—	—	61	29	42	49	103	78
Broach (Unspecified)	118	111	—	—	—	—	118	111	43	62	161	175
Total	179	140	—	—	—	—	179	140	85	111	264	251
DHOLLERAS—												
Mattheo	2	32	—	—	—	—	2	32	4	3	6	35
Cutch	—	—	—	—	—	—	—	—	28	34	23	34
Wagad	—	—	—	—	—	—	—	—	6	6	155	70
Dhollerias (Unspecified)	143	56	—	—	(c) 6	(c) 8	149	64	—	—	—	—
Total	145	88	—	—	6	8	151	96	33	43	139	139
SOUTHERNS—												
Kumtias (Jayawant)	—	—	—	—	—	—	—	29	29	29	29	29
Kumtias (Unspecified)	28	9	—	—	(h) 1	28	10	49	41	77	51	51
Westerns (Jowari and Mangari)	45	15	—	—	(i) 55	(i) 43	100	53	52	53	179	137
Northern	—	—	—	—	(j) 20	(j) 13	20	13	6	7	26	20
Coconadas (& Warangal)	—	—	—	—	—	—	—	19	26	19	26	26
Karunganni	—	—	—	—	—	—	—	40	26	41	42	42
Tinnevelles	1	1	—	—	(i) 15	(i) 9	16	9	2	1	2	10
Salem	—	—	—	—	—	—	—	—	—	—	—	—
Total	74	25	—	—	75	81	149	106	224	209	373	315
COMILLAS	—	—	—	—	—	—	—	—	—	—	—	—
OTHER SORTS (Unclassified)	4	5	—	—	—	—	4	5	2	3	6	8
Total Indian Cotton	535	466	157	108	166	254	833	828	791	846	1,629	1,574

*Standard Indian bales of approximate average gross weight 400 lbs. and net weight 392 lbs. of cleaned (lint) cotton.

NB—The detailed statement of Mill Stocks on 31st August 1937 is attached.

- (a) At Cawnpore. (h) In Hyderabad State.
 (b) In the Punjab. (i) In the Madras Presidency. Figures of trade stocks in the Madras Presidency for 1936 refer to Westerns, Northern and Coconadas tracts. From 1937 the relevant figures cover the whole of the Presidency.
 (c) At Ahmedabad. (j) In India State.
 (d) In the Central Provinces. (k) In Allahabad.
 (e) In Berar. (l) In Allahabad.

STOCKS OF RAW COTTON HELD BY THE

(Compiled from Voluntary

(In thousand bales*)

Trade Descriptions of Cotton	Bombay Island.	Ahmed abad	Rest of Bombay Presidency	Bombay Presidency	Madras North	Madras South	Madras Presidency	United Provinces.	Central Provinces.	Berar	Total C. P. and Berar	Bengal.
BENGALS—												
United Provinces	1	—	—	1	—	—	—	8	—	—	—	1
Punjab	2	—	—	2	—	—	—	—	—	—	—	—
Sind	1	1	—	2	—	—	—	—	—	—	—	—
Rajputana	4	—	—	4	—	—	—	—	—	—	—	—
Others	3	—	—	3	—	—	—	—	—	—	—	—
Total	11	1	—	12	—	—	—	11	—	—	—	2
OMRAS—												
Central Provinces Oomras	5	—	1	6	—	—	—	—	21	—	22	1
Berar Oomras	4	—	4	8	—	—	—	—	3	3	6	—
Khandesh—Ban Ra	1	—	4	5	—	—	—	—	1	—	1	—
Khandesh Oomras	5	—	4	9	—	—	—	—	—	—	—	—
Central India—Malvi	2	1	1	4	—	—	—	—	—	—	—	—
Central India—Others	8	1	—	6	—	—	—	1	—	—	—	—
Barisi and Nagar Oomras	2	—	4	6	—	—	—	—	—	—	—	—
Total	24	2	18	44	—	—	—	1	25	4	29	1
VERUM	1	—	—	1	—	—	—	—	7	3	10	—
HYDRABAD GAORANI	9	—	25	34	—	—	—	—	11	—	11	—
Total	10	—	25	35	—	—	—	—	18	3	21	—
AMER CANS—												
Punjab—(289 F and New Types)	12	3	2	17	3	—	3	3	—	—	—	1
Punjab (Unspecified—4 F)	13	1	—	14	—	18	18	27	—	—	—	6
Sind Sudhar—(289 F & F 1)	10	4	—	14	—	—	—	—	—	—	—	—
Sind (Unspecified—4 F)	9	3	—	12	—	17	17	—	—	—	—	1
Dharwar (Gadag 1)	1	1	1	3	—	—	—	—	—	—	—	—
Dharwar (Upland—Unspecified)	1	—	3	4	—	—	—	—	—	—	—	—
Cambodia (Coimbatore No 2)	2	—	—	2	1	42	43	—	—	—	—	1
Cambodia (Unspecified)	6	—	—	6	—	16	16	—	—	1	1	2
Total	54	12	6	72	4	93	97	30	—	1	1	11
BROACH—												
Surat Navsari (Surt)	22	13	2	37	—	3	3	—	1	—	1	1
Broach (Unspecified)	27	25	—	52	1	1	2	—	—	—	—	1
Total	49	38	2	89	1	4	5	—	1	—	1	2
DHOOLERAS—												
Mat heo	2	—	—	2	—	—	—	—	—	—	—	—
Cutch	—	—	—	—	—	—	—	—	—	—	—	—
Wagad	1	22	1	24	—	—	—	—	—	—	—	—
Dhoileras (Unspecified)	3	2	—	5	—	—	—	—	—	—	—	—
Total	6	24	1	31	—	—	—	—	—	—	—	—
SOUTHERNS—												
Kumptas (Jayawant)	15	1	1	17	8	—	8	—	—	—	—	—
Kumptas (Unspecified)	14	—	11	25	2	1	3	—	—	—	—	—
Westerns (Jowari and Mangari)	14	2	12	28	13	3	16	—	—	—	—	2
Northern	4	—	—	4	14	—	14	—	—	—	—	1
Coconadas (& Watangal)	—	—	2	2	1	1	2	—	—	—	—	1
Karunganni	—	—	—	—	—	26	26	—	—	—	—	—
Tinnevelles	—	—	—	—	—	26	26	—	—	—	—	—
Salems	—	—	—	—	—	1	1	—	—	—	—	—
Total	47	3	26	76	38	58	66	—	—	—	—	4
COMILLAS	—	—	—	—	—	—	—	—	—	—	—	—
OTHER SORTS	—	—	—	—	—	2	2	—	—	—	—	1
Total Indian Cotton	201	80	78	359	43	157	200	42	44	8	52	21
AMERICANS	7	3	—	8	—	—	—	—	—	—	—	—
EGYPTIANS	8	6	1	15	1	2	3	—	1	—	1	—
EAST AFR CANS	19	18	6	43	—	4	4	—	1	—	1	1
OTHERS (Sodan Mesopotamia etc.)	14	8	1	23	2	3	5	—	—	—	—	1
Total Foreign Cotton	48	33	8	89	3	9	12	—	2	—	2	2
GRAND TOTAL	249	113	86	448	46	166	212	42	46	8	54	23

* Standard Indian bales of approximate average gross weight 400 lbs.

MILLS IN INDIA ON 31st AUGUST, 1937.

Returns furnished by Mills.)
of 400 lbs. each)

Punjab and Sind	Rest of India	Total	Madras	Baroda	Central	Indus	Ko. Nagar	Other Indus	Punjab and Sind	Total	Trade Descriptions of Cotton
3	—	11	—	—	—	—	—	—	—	1	BENGAL—
10	—	18	—	—	—	—	—	—	—	2	United Provinces
—	2	4	—	—	—	—	—	—	—	—	Punjab
—	7	11	—	—	—	—	—	—	—	1	Sind
—	—	3	—	—	—	—	—	—	—	—	Kajirana
—	—	—	—	—	—	—	—	—	—	—	Others
13	8	47	—	1	—	1	—	—	2	4	Total
—	—	29	—	—	—	—	—	—	—	2	OMRAS—
—	—	14	—	—	—	—	—	—	—	1	Central Provinces Omrass
—	—	6	—	—	—	—	—	—	—	—	Iwar Omrass
—	—	9	—	—	—	—	—	—	—	—	Khandrab—Banilla
—	—	4	—	—	1	7	28	—	2	39	Khandrab Omrass
—	—	7	2	—	—	—	4	—	—	6	Central Indus—Malvi
—	—	6	—	—	—	—	—	—	—	—	Central Indus—Others
—	—	—	—	—	—	—	—	—	—	—	Hard and Nagar Omrass
—	—	—	—	—	—	—	—	—	—	—	Total
—	—	11	—	—	—	—	—	—	—	11	VERUM
—	—	43	11	—	—	—	—	—	—	11	HIVERABAD GORANI
—	—	56	11	—	—	—	—	—	—	11	Total
—	—	24	—	—	—	—	—	—	—	1	AMERICANS—
13	4	82	—	—	—	—	—	—	—	4	Punjab—(289 F and New
—	—	14	—	—	—	—	—	—	—	—	Types)
—	—	30	—	—	—	—	—	—	—	—	Punjab (Unspecified—4 F)
—	—	3	—	—	—	—	—	—	—	—	Sind Sudhar (289 F & F 1)
—	—	4	—	—	—	—	—	—	—	—	Sind (Unspecified—4 F)
—	—	—	—	—	—	—	—	—	—	—	Dharwar (Gadag 1)
—	—	46	—	—	—	—	—	—	—	—	Dharwar (Upland—Un
—	—	23	—	—	—	—	—	—	—	—	specified)
—	—	—	—	—	—	—	—	—	—	—	Cambodia (Colombatore
—	—	—	—	—	—	—	—	—	—	—	No. 2)
—	—	—	—	—	—	—	—	—	—	—	Cambodia (Unspecified)
13	4	228	—	1	1	3	—	—	2	3	Total
—	—	42	—	—	—	—	—	—	—	—	BROACH—
—	1	56	—	—	—	—	—	—	—	—	Surat Navsari (Surli)
—	—	—	—	—	—	—	—	—	—	—	Broach (Unspecified)
—	1	88	—	—	—	—	—	—	—	—	Total
—	—	2	—	—	—	—	—	—	—	—	DHOLLERAS—
—	—	—	—	—	—	—	—	—	—	—	Matheo
—	—	24	—	—	—	—	—	—	—	—	Cutch
—	—	3	—	—	—	—	—	—	—	—	Wagad
—	—	—	—	—	—	—	—	—	—	—	Dhollerass (Unspecified)
—	—	31	—	—	—	—	—	—	—	—	Total
—	—	25	—	—	—	—	—	—	—	—	SOUTHERNS—
—	—	28	—	—	—	—	—	—	—	—	Kumtass (Jayawant)
—	—	—	—	—	—	—	—	—	—	—	Kumtass (Unspecified)
—	—	—	—	—	—	—	—	—	—	—	Western (Jowari and
—	—	46	—	—	—	—	—	—	—	—	Mungari)
—	—	19	—	—	—	—	—	—	—	—	Northern
—	—	5	—	—	—	—	—	—	—	—	Coconadas (A Warangal)
—	—	26	—	—	—	—	—	—	—	—	Karunganni
—	—	26	—	—	—	—	—	—	—	—	Tinnevelles
—	—	1	—	—	—	—	—	—	—	—	Salema
—	—	—	—	—	—	—	—	—	—	—	Total
—	—	176	2	25	1	1	—	—	—	—	COMILLAS
—	—	—	—	—	—	—	—	—	—	—	OTHER SORTS
—	—	3	—	—	—	—	—	—	—	—	Total Indian Cotton
26	14	714	15	27	11	12	35	11	14	7	AMERICANS
—	—	8	—	—	—	—	—	—	—	—	EGYPTIANS
—	—	19	—	—	—	—	—	—	—	—	EAST AFRICANS
—	—	49	—	—	—	—	—	—	—	—	OTHERS (Sodan, Mesopotamia, etc.)
—	—	29	—	—	—	—	—	—	—	—	Total Foreign Cotton
—	—	103	—	—	—	—	—	—	—	—	GRAND TOTAL
26	14	819	15	31	17	12	35	12	14	7	

461 net weight 392 lbs. of cleaned (lint) cotton.

**STOCKS OF INDIAN COTTON ON 31st JANUARY, HELD BY THE MILLS AND
THE TRADE IN THE MADRAS PRESIDENCY**

TRADE DESCRIPTIONS OF COTTON	Mill Stocks on 31st January			Trade Stocks on 31st January			Total Stocks on 31st January		
	1935	1936	1937	1935	1936	1937	1935	1936	1937
Tinnevelles	21	14	28	7	12	4	28	26	32
Salams	10	6	9	2	3	49	12	9	58
Cambodias	42	41	47	11	22	87	53	63	134
*Northern & Westerns	14	14	21			12	14	14	33
*Coconadas	†	†	†			9			9
*Outside Cottons	41	28	34				41	28	34
Total	128	103	139	20	37	161	148	140	300

* Mill stocks only for 1935 and 1936

† Less than 500 bales

RECEIPTS AT MILLS IN INDIA OF

(Compiled from voluntary returns

1st September 1936 to

(In thousand bales*)

Trade Descriptions of Cotton	Bombay Island	Ahmedabad	Rest of Bombay Presidency	Total Bombay Presidency	Madras Presidency	United Provinces	C.P. & Berar	Bengal	Punjab and Delhi	Rest of British India
BENGALS—										
United Provinces	10	1	—	11	—	78	—	3	15	—
Punjab	13	—	—	13	—	20	—	2	49	—
Sind	9	4	1	14	—	2	—	—	—	8
Rajputana	18	—	—	18	—	1	—	—	—	14
Others	11	—	—	11	—	—	—	1	—	—
Total	61	5	1	67	—	101	—	6	64	20
OMRAS—										
Central Provinces Omras	15	1	2	18	—	—	65	4	—	—
Deccan Omras	22	1	6	29	—	—	24	1	—	—
Khandesh—Banilla	5	—	9	14	—	—	1	—	—	—
Khandesh Omras	15	1	18	34	—	—	—	—	—	—
Central India Malvi	9	11	2	22	—	8	—	—	—	—
Central India—Others	25	5	3	33	—	15	—	1	—	—
Barisi and Nagar Omras	12	—	20	32	—	—	—	—	—	—
Total	103	19	60	182	—	21	90	6	—	—
VERUM	5	—	1	6	—	—	16	—	—	—
HYDERABAD GAURAN	31	—	50	81	1	—	18	—	—	—
Total	36	—	51	87	1	—	32	—	—	—
AMER CANS										
Punjab—(289 F and F New Types)	31	13	5	49	3	5	—	2	—	—
Punjab (Unspecified—4 F)	41	6	—	47	29	101	—	25	36	4
Sind S. dhar (289 F and F I)	39	16	—	55	—	2	—	1	—	—
Sind (Unspecified—4 F)	24	14	2	40	25	—	—	3	—	—
Dharwar (Cadag I)	5	3	2	10	—	—	—	—	—	—
Dharwar (Upland—Unspecified)	5	1	6	12	—	—	—	—	—	—
Cambot a (Cambotore No 2)	4	—	—	4	106	1	—	2	—	—
Cambot a (Unspecified)	15	2	—	17	45	—	2	6	—	—
Total	183	53	15	251	211	109	2	39	36	4
BROACH—										
Surat Navsari (Surti)	80	39	6	125	5	—	1	2	—	—
Broach (Unspecified)	85	66	3	154	1	—	—	1	—	1
Total	145	105	9	259	6	—	1	3	—	1
DHOLLERAS—										
Matheo	8	1	—	10	—	—	—	—	—	—
Cutch	1	—	—	1	—	—	—	—	—	—
Wagad	7	97	2	106	—	—	—	—	—	—
Dholleris (Unspecified)	21	5	—	26	—	—	—	—	—	—
Total	36	103	2	141	—	—	—	—	—	—
SOUTHERNS—										
Kumtias (Jaysawant)	32	3	4	39	8	—	—	—	—	—
Kumtias (Unspecified)	28	1	16	45	2	—	—	—	—	—
Western (Jowari and Mongari)	39	6	25	69	19	—	—	—	—	—
Northern	6	1	—	7	10	—	—	—	—	—
Coconas (and Warangal)	1	—	2	3	4	—	—	2	—	—
Karunganni	2	—	—	2	58	—	—	—	—	—
Tionevelles	—	—	—	—	53	—	—	—	—	—
Salems	—	1	—	1	3	—	—	—	—	—
Total	107	12	47	166	157	—	—	10	—	—
COMILLAS	—	—	—	—	—	—	—	—	—	—
OTHER SORTS	—	1	—	1	8	—	—	1	—	—
Total India Cotton	673	300	185	1,158	863	231	125	65	100	25
AMER CANS	24	1	—	25	—	—	—	1	—	—
FOYTIANS	24	40	3	67	7	—	2	1	1	—
EAST AFRICANS	97	130	17	244	6	—	1	6	2	—
OTHERS (Sudan Mesopotamia etc)	86	27	3	116	8	—	1	6	—	—
Total Foreign Cotton	181	198	23	402	19	—	4	14	3	—
GRAND TOTAL	854	498	208	1,560	402	231	129	79	103	25
Indian raw cotton consumed in m/s in India (Figures compiled only from returns under the Indian Cotton Cess Act—Bales of 40 lbs nett)	837	84	189	1,110	411	209	123	89	94	31

* Standard Indian bales of approximate average gross

408 lbs. each.											GRAND TOTAL		Trade Description of Cotton
Total Punjab India	Hydrabad	Mysore	Madras	Cochin	India	Kutch & other	Central India	East India	South India	Other	Total	Total	Trade Description of Cotton
103	—	—	—	16	—	—	—	—	—	—	16	123	INDIA— Punjab (Unspecified—4 F)
22	—	—	—	—	—	—	—	—	—	—	22	87	Hydrabad
23	—	—	—	—	—	—	—	—	—	—	23	22	Madras
12	—	—	—	—	—	—	—	—	—	—	12	44	Cochin
234	—	2	—	17	—	—	—	—	—	—	24	292	India
27	—	—	—	—	—	—	—	—	—	—	27	92	Kutch
54	—	—	—	—	—	—	—	—	—	—	54	57	Central India
15	—	—	—	—	—	—	—	—	—	—	15	3	East India
34	—	—	—	—	—	—	—	—	—	—	34	15	South India
23	—	—	—	—	—	—	—	—	—	—	23	144	Other
49	—	—	—	—	—	—	—	—	—	—	49	28	INDIA— Punjab (Unspecified—4 F)
32	3	—	—	1	—	—	—	—	—	—	32	32	Hydrabad
299	3	—	10	41	122	—	—	—	—	—	194	493	Madras
22	—	—	—	—	—	—	—	—	—	—	22	23	Cochin
98	24	—	—	—	—	—	—	—	—	—	98	122	India
120	24	—	—	—	—	—	—	—	—	—	120	145	Kutch
79	—	—	—	—	—	—	—	—	—	—	79	85	Central India
242	—	—	—	—	—	—	—	—	—	—	242	271	East India
57	—	—	—	—	—	—	—	—	—	—	57	80	South India
71	—	—	—	—	—	—	—	—	—	—	71	81	Other
16	—	—	—	—	—	—	—	—	—	—	16	10	INDIA— Punjab (Unspecified—4 F)
12	—	—	—	—	—	—	—	—	—	—	12	12	Hydrabad
113	—	—	—	—	—	—	—	—	—	—	113	118	Madras
70	—	—	—	—	—	—	—	—	—	—	70	71	Cochin
654	—	2	4	24	—	2	12	10	—	—	54	708	India
103	—	—	—	—	—	—	—	—	—	—	103	119	Kutch
187	—	—	—	—	—	—	—	—	—	—	187	185	Central India
270	—	—	—	—	—	—	—	—	—	—	270	304	East India
10	—	—	—	—	—	—	—	—	—	—	10	22	South India
1	—	—	—	—	—	—	—	—	—	—	1	3	Other
100	—	—	—	—	—	—	—	—	—	—	100	145	INDIA— Punjab (Unspecified—4 F)
26	—	—	—	—	—	—	—	—	—	—	26	29	Hydrabad
143	—	—	20	—	—	—	—	—	—	—	143	199	Madras
47	—	—	—	—	—	—	—	—	—	—	47	57	Cochin
47	—	—	—	—	—	—	—	—	—	—	47	61	India
93	—	—	—	—	—	—	—	—	—	—	93	108	Kutch
20	—	—	—	—	—	—	—	—	—	—	20	15	Central India
60	—	—	—	—	—	—	—	—	—	—	60	22	East India
53	—	—	—	—	—	—	—	—	—	—	53	18	South India
4	—	—	—	—	—	—	—	—	—	—	4	60	Other
333	9	20	6	1	—	—	—	—	—	—	33	50	INDIA— Punjab (Unspecified—4 F)
10	—	—	—	—	—	—	—	—	—	—	10	—	Hydrabad
2 397	36	25	58	84	126	42	60	17	—	—	448	2 535	Madras
26	—	—	—	—	—	—	—	—	—	—	26	26	Cochin
78	—	—	—	—	—	—	—	—	—	—	78	86	India
259	—	—	—	—	—	—	—	—	—	—	259	288	Kutch
79	—	—	—	—	—	—	—	—	—	—	79	62	Central India
442	—	—	—	—	—	—	—	—	—	—	442	442	East India
2 529	36	51	89	84	127	45	60	17	—	—	448	3 017	South India
2 171	50	53	52	79	106	43	58	19	—	—	460	2 631	Other

INDIAN RAW COTTON COMBINED (in millions of bales) (Figures compiled mainly from returns under the Indian Cotton Cess Act—Bales of 400 lbs. nett)

and net weight 397 lbs. of cleaned (lint) cotton.

APPENDIX XII

EXPORTS BY SEA OF INDIAN RAW COTTON CLASSIFIED BY VARIETIES

(Compiled from Voluntary Returns furnished by Exporters)

1st September 1936 to 31st August 1937

(In thousand bales* of 400 lbs each)

Trade Descriptions of Cotton	Exported to				Total Exports
	Europe (excluding United Kingdom and the West)	United Kingdom	Japan	China and the East (excluding Japan)	
BENGALS—					
United Provinces	6	4	4	—	14
Punjab	232	72	292	3	599
Sind	142	56	22	1	221
Rajputana	21	1	15	—	37
Others	1	—	1	—	2
Total	40.	133	334	4	873
OOMRAS—					
Central Provinces—Oomras	37	47	66	4	154
Berar—Oomras	30	3	473	—	506
Khandesh—Banulla	1	—	—	1	2
Khandesh—Oomras	57	5	214	3	279
Central India—Malvi	20	—	19	—	39
Central India—Others	18	1	105	3	197
Barsi and Nagar—Oomras	13	3	70	1	87
Total	176	59	947	12	1 194
VERUM	2	—	—	—	2
HYDERABAD GAORANI	—	—	23	—	23
Total	2	—	23	—	25
AMERICANS—					
Punjab—(289 F & New Types)	8	4	15	1	28
Punjab (Unspecified—4 F)	182	228	474	17	901
Sind Sudhar—(289 F & F 1)	30	19	43	5	97
Sind (Unspecified—4 F)	20	37	9	4	70
Dharwar (Gadag 1)	—	—	14	—	14
Dharwar (Upland—Unspecified)	—	—	7	—	7
Cambodia (Co mbatore No 2)	4	—	20	2	26
Cambodia (Unspecified)	7	3	15	—	25
Total	251	251	597	29	1 168
BROACH—					
Surat Navsari (Surti)	47	1	23	—	71
Broach (Unspecified)	50	9	48	10	122
Total	102	10	71	10	193
DHOLLERAS—					
Mattheo	40	3	19	—	62
Cutch	—	—	6	—	6
Wagad	2	—	—	—	2
Dhollerass (Unspecified)	7	—	93	8	108
Total	49	3	118	8	178
SOUTHERNS—					
Kumptas (Jayawant)	—	—	3	—	3
Kumptas (Unspecified)	2	—	3	—	5
Westerns (Jowari and Mungari)	31	—	49	—	80
Northerns	17	7	6	—	30
Coconadas (and Warangal)	90	8	—	—	98
Karunganni	4	2	5	—	11
Tinnevelles	6	3	18	—	27
Saloms	—	—	1	—	1
Total	80	20	85	—	18
COMILLAS	30	5	—	1	36
OTHER SORTS (Unclassified)	11	3	149	—	163
GRAND TOTAL	1 103	624	2 324	64	4 015
Total exports as per official returns from British Indian and Kathiawar Ports—Bales of 400 lbs. nett	1 226	565	2 404	72	4,267†

* Standard Indian bales of approximate average gross weight 400 lbs and net weight 392 lbs of cleaned (1st) cotton

† These figures exclude exports from Burma.

APPENDIX XIII.

INSTITUTE OF PLANT INDUSTRY, INDORE

Progress Report for the year ended June 30th, 1937.

NOTE.—In accordance with a resolution of the Board of Governors this report has been reduced in size and is of a general nature. The detailed results of research and experiment carried out during the year have been published separately.

The Institute of Plant Industry is a Society registered under the Holkar State Societies Registration Act and its primary objects are:—

- (a) The investigation into matters relating to the growth, nutrition and general improvement of raw cotton in India
- (b) Training of research students nominated by the Indian Central Cotton Committee in cotton investigation work.
- (c) The agricultural development of the Indian States and Territories who are members of the Society.
- (d) The training of agricultural officers and agricultural subordinates who are sent by the States for special instruction at the Institute

FINANCE.—

The buildings and equipment of the Institute were provided in the first instance by generous grants from the Indian Central Cotton Committee amounting to about Rs. 2,80,000 and 300 acres of land for the experimental station were given on long lease by the Holkar State at the nominal rent of Rs. 1 per acre per annum.

	During the year
Income from Government Grants	Rs. 2,80,000
Income from Indian Central Cotton Committee	Rs. 2,80,000
Income from Land	Rs. 300
Income from Other Sources	Rs. 100
Total	Rs. 5,60,400
Expenditure	Rs. 5,60,400
Balance	Rs. 0

FINANCE.

The rate of contribution from the member States has been fixed by the Board of Governors at Rs. 100 per annum. If contributions at this rate were maintained by the member States have

maintain their subscription at the standard rate and to bargaining for admission by prospective members.

stores and replacements and that in future such very drastic economy becomes necessary the work of the Institute is bound to suffer

of the Audit Department. The buildings belonging to the Society have been valued by the Central Division, Public Works Department, and a register of the immoveable property of the Society opened.

business
services of
At the

In February 1937 a Committee consisting of Rao Bahadur Viswanath, Officiating Director, Imperial Institute of Agricultural Research, Dr J N Mukerjee, Professor of Chemistry, Calcutta University and the Director, Institute of Plant Industry, met in accordance with a Board of Governors' resolution to consider the programme and staffing of the Chemistry and Agronomy Section. Their report has been prepared and will be considered by the next Board meeting.

Staff and Students—During the year considerable changes have taken place in the staff of the Institute. Mr F K Jackson retired from the Directorship in July 1936, and his place was taken by Mr T R Low, I.A.S. Mr J B Hutchinson, the Geneticist and Botanist, left in April 1937 to take up an appointment in Trinidad. Mr K Ramiah of the Madras Agricultural Service has been appointed in his place. Mr M P Singh, a voluntary research student in the Genetics and Botany Section, was appointed by the Indian Central Cotton Committee to the post of Cotton Research Officer at Rangamati (Bengal) in the Comilla Cotton Breeding Scheme, and Messrs G K Govande and B S Kocharekar, two other research students in the same Section, secured appointments as Plant Breeders in Baroda.

Research Students for the Institute are now selected by the Research Students Selection Sub Committee of the Indian Central Cotton Committee. During the year two such studentships were offered and Mr D Ganesan from Madras University was appointed to one post. The second remained vacant as no candidate of sufficient merit presented himself.

States contributing to the Institute—At the closing date of this report the following States and Thikanas were members of the Institute, arranged in order of joining:—

Indore	Bijawar	Alwar
Dhar	Barwani	Khetri
Jaora	Bikaner	Bagli
Datia	Rewa	Jhabua
Rutlam	Jaipur	Chhatrapur
Dewas I	Bundi	Sikar
Sitamau	Partabgarh	Karauli
Narangarh	Orchha	Dewas II
Tonk	Jodhpur	

Visitors—Sir John Russell, the Director of the Rothamsted Experimental Station, during his tour in India on behalf of the Imperial Council of Agricultural Research, stayed

of the Audit Department. The buildings belonging to the Society have been valued by the Central Division, Public Works Department, and a register of the immoveable property of the Society opened.

is, as usual, President of the Board.

business services of At the

considered by the next Board meeting.

Staff and Students. During the year considerable progress has been made in the

Indian Central Cotton Committee to the post of Cotton Research Officer at Rangamati (Bengal) in the Comilla Cotton Breeding Scheme and Messrs G. K. Govande and B. S. Kocharekar, two other research students in the same Section, secured appointments as Plant Breeders in Baroda.

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Datia	Rewa	Jhabua
Ratlam	Jaspur	Chhatarpur
Dewas I	Bundi	Sikar
Sitamar	Partabgarh	Karauli
Narsingarh	Orehha	Dewas II
Tonk	Jodhpur	

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Visitors.—Sir John Russell, the Director of the Rothamsted Experimental Station, during his tour in India on behalf of the Imperial Council of Agricultural Research, stayed

is only by introducing into the general agricultural routine of the cultivators the improvements that have been worked out by research and experiment that any real advance can be made. There are great possibilities of improvement and development in a number of directions and an excellent beginning has been made in many States. It is hoped with the general realization of the importance of agricultural development to the country that this work will be maintained and extended.

loan of suitable films to
addition to a display of
ments and processes suc
ploughing. Books, bullet
cultural improvement are on sale and are distributed free.

It is unfortunate that the season for these *melas* is very restricted several usually

Farm—Except for sharp frosts in the cold weather the season has been normal and averagely favourable. No serious epidemic occurred among the farm cattle.

During the year work on cotton, tri
barley, lucerne pad

Crop	Area in acres	standard inds per acre.
Cotton	63.2	2.7
Turkey	14.1	6.6
Groundnuts	2.0	5.0
Jowar	4.0	13.0
Wheat	28.0	5.0
Linseed	16.45	4.0
Gram	25.75	3.0

Provision of training—During the year 80 persons from seventeen contributing States and elsewhere received practical training at the Farm in various subjects. These included

Agricultural Officers from States, farm memals from States, cultivators and students. In addition to those who actually came for training a considerable number of cultivators and others interested in rural development visited the farm to look round and to get an idea of what was going forward.

Cattle —It is now generally recognized that any improvement in arable agriculture and in the economic condition of the rural population is largely dependent upon, and must be

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It is also gratifying to note that side by side with breeding and improvement work the popularity and use of the Burdizzo castrator is gaining ground in several States and the necessity for the castration of worthless scrub bulls is becoming recognized

Research Work —(1) *Classification of cotton* —This study referred to in last year's

shrubs.

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of
these were grown at Alibada farm, Nawanagar. The produce of these plants was examined at the Institute and the pick of the material was sent to Viramgam. At the request of the Bhopal Darbar a survey of the cotton area of the State was made by the Geneticist and Botanist with a view to suggest possibilities of improving cotton cultivation in Bhopal. The crop composition in Bhopal was found to be very similar to that in Malwa except that the proportion of the Uplands was very much lower than in Malwa.

(iii) *Iranian Tour*.—One assistant was sent to Iran during the year to study the cotton areas there and collect samples of *herbaceum* cotton likely to be useful for breeding work in India. As would be seen from the report submitted to the Indian Central Cotton Committee the *herbaceum* cotton of Iran exhibited great variability and a large number of single plants representative of the different regions was brought back by the assistant together with some bulk samples. It is hoped that the Iran material will be particularly useful for the breeding scheme at Viramgam.

(iv) *Selection for export*.—Cotton samples had come to the attention of the

Committee in the case of Iran

to the fact that portions of India now
ally grew medium or long staple cottons,
Malwa, the Nerbada valley, parts of

There are selections from the material collected in Malwa and Nimar which while

(v) *Selection and Breeding*.—The principle of basing selection on variance as well as mean values has been evolved at the Institute. Indian Journal of Agriculture and the other special technique.

(vi) *Physiology*.—A botanical analysis of the published data on spinning quality and hair characters has shown that the two are not related. Experiments were carried out to determine whether handspun yarns on the *takli* or *charliha* could be used to estimate fibre properties. Such tests made with selected strains of Malvi cottons on which Technological reports were available showed that the results obtained from the hand spinning

Another experiment was conducted to see if there was any advantage in thinning the

In the trials arranged at these centres the following results were obtained:

In cotton trials in Bundi State Cawnpore 570 did not excel the local cotton markedly either under *barani* or under irrigated conditions. The most promising line of improving the local crop would appear to be to start selection work in it.

Malwa—In Malwa the previous trials having conclusively proved the suitability

quality

Nimar—Varietal trials were conducted at Kukshi, Dhamnod and Barwani. In these the yields at Kukshi and Barwani were very poor due to insufficiency of rains. At Dhamnod where the yield was good there were no significant differences among the varieties. The Malvi selections though better than the local cotton in quality were poor in yield and ginning percentage.

STAFF AND RESEARCH STUDENTS OF THE INSTITUTE OF PLANT INDUSTRY AS ON 30TH JUNE 1937

Administrative and Clerical —

Director and Agricultural Adviser to States in Central India & Rajputana	T R Low B Sc Agri (London) M C I A S
Personal Assistant	A N Srivastava M Sc (Lucknow)
Head Clerk and Accountant	G M Nadkarni
Camp Clerk	M Mohiuddin Khan
Assistant Clerk	S M Ajmi
Assistant Clerk	Basantlal Ganpatrao
Junior Clerk	S M A. Azim
Despatcher	V R Shirsath
Artist	S J Onkar
Librarian	Bashir Hussain Khan

Genetics and Botany —

Geneticist and Botanist	V D Wad M A. M Sc (Bombay) A. I. I. S.
Senior Botanical Assistant	R K Aurangabadkar M Sc (Allahabad)
Statistician	
Genetical Assistant	
Plant Breeding Assistant	
Extra Assistant	
2nd Botanical Assistant	
2nd Plant Breeding Assistant	
Fieldman	
Computer	
Research Student	

Chemistry and Agronomy —

Chemist and Agronomist	V D Wad M A. M Sc (Bombay) A. I. I. S.
Chemical Assistant	R K Aurangabadkar M Sc (Allahabad)
Agronomic Assistant	
Laboratory Assistant	
Laboratory Assistant	
"	
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"	
"	
"	

Propaganda and Extension Work —

Extension Officer	Nubersingh, B Ag (Bombay)
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Farm Staff —

Farm Superintendent	G C Tambe B Ag (Bombay)
Assistant Farm Superintendent	S C. Talesara B Ag (Bombay).
Junior Farm Assistant	V N Bhargava B Sc (Allahabad)
"	S S Gangadhar Bhotla B Ag (Bombay)
"	Nihalsingh
Fieldman	V R Sathe
"	G M Nigudkar
"	S J Rathod
Storekeeper	

INSTITUTE OF PLANT INDUSTRY, INDORE

Programme of work for 1937-38—Genetics and Botany Section

COTTON

(1) *Genetics*—Study of inheritance of major factors in Asiatic and Indian American cottons

Study of the inheritance of quantitative characters

Study of interspecific hybrids with special reference to the bearing of heterosis on plant breeding procedure

Study of the rate of mutation in mutable strains

(2) *Cytology*—Study of sterile types derived from an interspecific hybrid (*G. arboreum* × *G. herbaceum*)

Study of chromosome behaviour in F₁ F₂ and back crosses of *G. anomalum* × cultivated Asiatic cottons

(3) *Physiology*—Study of hair characteristics Development of tests for lint quality suitable for the needs of the plant breeder Study of relative selection values of four simple genotypes in Malwa and Nimar

(4) *Selection and Breeding*—Propagation and distribution of Malvi 9

Study of and re selection in progeny rows of 1933 selections and Dhar mass Malvi Study of problems of transference of *herbaceum* quality to Malvi type

Study of Cambodia selections grown at Badnawar

Study of selections in Nimar *desi* made in 1933 and grown in 1934 at Dhamnod

Pearson and Nyeman's L tests

OTHER CROPS

Work on other crops will be largely confined to the selection and purification of de

(1) *Genetics*—Study of inheritance of certain characters in local *durum* wheats

(2) *Selection and Breeding*—Selection and breeding work will be continued on the following crops —

Kharif
Jowar
Bajra
Tur
Til
Niger
Groundnut

Rabi
Wheat
Barley
Gram
Linseed
Kesar
Safflower

A part at least of the breeding material in these crops will be grown on the farms of member-States

(3) *Lathyrum* —Work on Kesari is being continued and in connection with it, the botanical and agricultural problems involved in the growth of the associated weeds responsible for lathyrism are being studied

Subject No 4 —Programme of work for 1937-38

Section of Chemistry and Agronomy

Nutrition and growth of cotton

(b) *Laboratory work* —(1) Estimation of plant food removed by cotton at different stages of growth under differing ranges of fertility i.e. to ascertain the nutrients absorbed in different stages of growth by high and low yielding plants (Indore and Sriganganagar soils)

(2) Analysis of soil round growing plants of known differences of yield and growth in correlation with (1) above

(3) Examination of leaves of normal and abnormal plants for minerals, carbohydrates and nitrogen

(c) *Field work* —Agronomical field trials in different tracts of Rajputana and at Indore to test the applicability in practice of results and indications obtained from pot cultures and laboratory work

(d) *Continuation of current work* —Immediate and cumulative effect on the cotton crop in rotation in respect of —

(1) Previous cultivation and crop

(2) Fallowing

(3) Humus supply

(e) *Dry farming of cotton in Jaipur*—effect of bunding

Other crops

Sugarcane and rice

Selections and tests from collected varieties to be carried out in different areas. Investigation into manuring, water supply, planting and harvesting

General —Routine analysis. Replies to agronomical queries, design, guidance and reporting on field tests

APPENDIX XIV

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEES FUNDS AS ON AUGUST 31st, 1937

INDIAN CENTRAL COTTON COMMITTEE OFFICE.

1	Secretary	Mr D N Mahta, B.A. (Oxon.) FLS	On deputation from the Central Provinces Department of Agriculture
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2	Publicity Officer	Mr R D Mithra, M.A., Agri (Oxon) Post Grad., Dip Agri (Oxon), Post Grad., Res B Lit (Oxon)	
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TECHNOLOGICAL LABORATORY, BOMBAY

3	Director	Dr Nazir Ahmad MSc Ph D (Cantab), F. Inst P	Late Head of Science Department, Islamia College, Lahore.
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4	Spinning Master	Mr V V Gupta, B Sc (Tech)	
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5	Senior Research Assistant (Chemist)	Mr D L Sen MSc Tech (Manch) M Sc (Bom) A.I. Sc, FIC	Research Student at the Indian Institute of Science and Manchester College of Technology
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6	Senior Research Assistant (Physicist)	Mr N Hari Rao, M.Sc (Calcutta)	Research Scholar Technological Laboratory (Textile Physics)
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7	Senior Research Assistant (Physicist)	Mr Ram Saran Koshal M Sc (Punjab)	Do do
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8	Junior Research Assistant (Microscopist)	Mr Amar Nath Gulati, M Sc (Punjab)	Imperial Institute of Veterinary Research, Mukteswar, U P
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9	Junior Research Assistant	Mr C Nanjundayya, M Sc (Calcutta)	Research Scholar, Technological Laboratory (Textile Physics)
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* Assumed charge on the 4th October 1937

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—*contd*

TECHNOLOGICAL LABORATORY, BOMBAY—*contd*

10	Junior Research Assistant	..	..	Dr K R Sen, D Sc (Dacca)	Research Scientist, Technological Laboratory, Lyallpur	—
11.	Statistician and Personal Assistant	..	..	Mr V. Venkataraman, M A (Madras)	Statistical Assistant, Labour Office, Government of Bombay, Bombay	—
12	Electrician ..	..	..	Mr Herculano Lobo, LEE (V J T I)		—
13	Spinning Assistant	..	..	Mr N Iyengar		—
14	Senior Tester	..	..	Mr H B Joshi, B Sc		—
15.	Senior Tester	..	..	Mr S S Sukthanker, L T C (V J T I)		—
16.	Junior Tester	..	..	Mr R G Panvalkar, B Sc		—
17	Junior Tester	..	..	Mr G D Bhude, B Sc		—
18.	Junior Tester	..	..	Mr K V N. Nayar		—
19.	Junior Tester	..	..	Mr V N Modak, B Sc.		—
20.	Junior Tester	..	..	Mr L V Sundaraman, B.A.		—
21.	Junior Tester	..	..	Mr P S Sambamurthy		—
22.	Junior Tester	..	..	Mr G J Kharkar, B.Sc.		—
23.	Junior Tester	..	..	Mr Sassoon Samson, B.Sc		—
24.	Junior Tester	..	..	Mr. A. J Fard ..		—
25.	Junior Tester	..	..	Mr U. K Benegal, B.A.		—
26.	Junior Tester	..	..	Mr. P. V Nachane, B Sc.		—
27.	Junior Tester	..	..	Mr C. S. Ramanathan B Sc...		—

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEES FUNDS AS ON AUGUST 31st 1937—*contd*

TECHNOLOGICAL LABORATORY BOMBAY—*contd*

28 Junior Tester	Mr S N Rao M Sc	—
29 Junior Tester	Mr B N Prabhakar B Sc	—
30 Junior Tester	Mr S M Nawaz B Sc	—
31 Draughtsman	Mr B G Mehta	—
32 Statistical Clerk	Mr R Krishna Iyer	—
33 Statistical Clerk	Mr P K. Wagle	—
34 Mechanic	Mr J B Kharas	—

INSTITUTE OF PLANT INDUSTRY, INDORE

35 Director	Mr T R Low B Sc (Agr) (London) L A S	Principal Agricultural College Cawnpore On deputation from the United Provinces Department of Agriculture
36 Geneticist and Botanist	Mr K Ramiah L Ag M Sc D P Agr (Cantab)	Paddy Specialist to the Madras Government On deputation from the Madras Department of Agriculture
37 Chemist and Agronomist	Mr Y D Wad M A M Sc (Bombay) A I S c	Research Student, Indian Central Cotton Committee
38 Farm Superintendent	Mr G C Tambe B Ag (Bombay)	—
39 Extension Officer	Mr Kuber Singh B Ag (Bombay)	—
40 Senior Botanical Assistant	Mr R L M Ghose M Sc (Allahabad)	—
41 Assistant Farm Superintendent	Mr S C Talesara B Ag (Bombay)	Research Student Indian Central Cotton Committee
42 Personal Assistant	Mr A N Srivastava M Sc (Lucknow)	—
43 Statistical Assistant	Mr V G Panse B Sc (Bombay)	—

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—*contd.*

INSTITUTE OF PLANT INDUSTRY, INDORE—*contd.*

44.	Genetical Assistant	..	..	..	Mr. Bholanath, M.Sc. (Punjab)	..	..	Research Student, Cotton Committee	Indian Central
45.	Plant Breeding Assistant	..	..	..	Mr. C. P. Dutt, M.Sc. (Calif.)	..	..	—	—
46.	Extra Assistant	..	..	..	Mr. K. M. Simlote, B.Ag. (Nagpur)	..	..	—	—
47.	Botanical Assistant	..	..	..	Mr. P. D. Gadkari, M.Sc. (Nagpur)	..	..	King Edward Memorial Inland Research Scholar at I.P.I.	..
48.	Second Plant Breeding Assistant	..	..	..	Mr. M. A. A. Ansari, M.Sc. (Lucknow)	..	..	Research Student, Institute of Plant Industry, Indore.	..
49.	Chemical Assistant	..	..	..	Mr. B. K. Aurangabadkar, M.Sc. (Allahabad)	..	..	Do.	do
50.	Agronomical Assistant	..	..	..	Mr. K. N. Ambegaonkar, M.Sc. (Benares)	..	..	Do.	do.
51.	Junior Farm Assistant	..	..	..	Mr. V. N. Bhargava, B.Sc. (Allahabad)	..	..	Do.	do.
52.	Junior Farm Assistant	..	..	..	Mr. S. S. Gangadhar Bhotla, B.Ag. (Bombay)	..	..	—	—
53.	Artist	..	..	..	Mr. J. S. Ocar	..	..	—	—

BOMBAY RESEARCH SCHEMES.

(i) *Breeds Cotton Breeding Scheme.*

54.	Cotton Breeder	..	..	..	Mr. P. L. Patel, M.Sc. (Iowa, U.S.A.)	..	..	—	—
55.	Botanical Assistant	..	..	..	Mr. S. J. Patel, M.Ag. (Bombay)	..	..	On deputation from Bombay Department of Agriculture.	..
56.	Botanical Assistant	..	..	..	Mr. M. S. Pandya, B.Ag., B.Sc. (Bombay)	..	..	Do.	do.

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—*contd*

BOMBAY RESEARCH SCHEMES—*contd*

		(i) <i>Jalgaon Cotton Breeding Scheme</i>		On deputation from Bombay Department of Agriculture	
57	Botanical Assistant	..	..	Mr T R Khadilkar, B Ag	—
58	Botanical Assistant	..	..	Mr N D Dohapande B Ag (Bombay)	..
		(iii) <i>Poona Cotton Wilt Breeding Scheme</i>		Research Student Indian Central Cotton Committee	
59	Agricultural Overseer	..	..	Mr J D Ranadive, B Ag (Bombay)	—
60	Agricultural Overseer	..	..	Mr Y S Kulkarni B Ag (Bombay)	..
		(iv) <i>Cotton Wilt Breeding Scheme for Surat Area</i>			
61	Agricultural Overseer	..	..	Mr S P Shah, B Ag (Bombay)	..
		(v) <i>Dholeras—Wagad Cotton Breeding Scheme, Vrangam.</i>		On deputation from Bombay Department of Agriculture	
62	Agricultural Overseer	..	..	Mr R J Naik, M Ag (Bombay)	..
		BOMBAY SEED DISTRIBUTION SCHEMES			
		(i) <i>Surat Scheme</i>			
63	Cotton Assistant	..	..	Mr V D Dosa, Matno	Do
64	Cotton Assistant	..	..	Mr V. V. Patel, B Ag (Bombay)	Do.
		(ii) <i>Khandesh (Jaria) Scheme</i>			
65	Superintendent, Bhadgaon Farm	..	..	Mr H. U. Vora, B Ag	Do
66	Cotton Supervisor	..	..	Mr R B Nimbalkar, B Ag (Bombay)	Do.
		(iii) <i>B D S Scheme</i>			
67	Agricultural Overseer	..	..	Mr D A. Dave B Ag (Bombay)	..

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st 1937.—*contd*

BOMBAY SEED DISTRIBUTION SCHEMES—*contd*

(iv) *Jaywant and Gadag No 1 Scheme*

68	Agricultural Overseer	.	Mr B S Patel B Ag (Bombay)	—
69	Agricultural Overseer	..	Mr B M Dhumana B Ag (Bombay)	—
70	Agricultural Overseer	.	Mr B S Tadsur, B Ag (Bombay)	—
71	Agricultural Overseer	.	Mr D V Hiremath, B Ag (Bombay)	—
72	Agricultural Overseer	.	Mr S M Tippashetti B Ag (Bombay)	—
73	Agricultural Overseer	..	Mr S F Chandrannavar B Ag (Bombay)	Worked as District Supervisor in the Economic Enquiry Scheme
74	Agricultural Overseer	.	Mr S T Aralemath B Sc (Ag)	—

BOMBAY COTTON FORECAST IMPROVEMENT SCHEME

75	Provincial Officer	..	Mr G R Ambekar School Final	On deputation from Bombay Department of Agriculture
76	Cotton Supervisor, Indus Left Bank	.	Mr H. A Idnanu B Ag (Bombay)	Research Student, Indian Central Cotton Committee on deputation from Sind Department of Agriculture
77.	Cotton Supervisor, Indus Right Bank	.	Mr. W. P Shahant B Ag (Bombay)	On deputation from Sind Department of Agriculture
78	Senior Assistant to Cotton Supervisor, Indus Right Bank		Mr Agha Khan Mahomed, 2 years Lyallpur Course	Do do
79	Senior Assistant to Cotton Supervisor, Indus Left Bank.		Mr A B Aram B Ag (Bombay) CHD (Manchester)	Do do.
80	Junior Assistant to Cotton Supervisor, Indus Right Bank.		Mr Lekhray Parmanand	Do do.

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS DRAWN FROM THE INDIAN CENTRAL COTTON COMMITTEES
FUNDS AS ON AUGUST 31st 1937—contd

SIND SEED DISTRIBUTION SCHEME—contd

81	Junior Assistant to Cotton Supervisor Indus Right Bank	Mr W R Shahani F Y A.	On deputation from Sind Department of Agriculture	
82	Junior Assistant to Cotton Supervisor, Indus Right Bank	Mr Gulehah U B	Do	do
83	Junior Assistant to Cotton Supervisor Indus Right Bank.	Mr Premnang T Advani F Y A.	Do	do
84	Junior Assistant to Cotton Supervisor Indus Left Bank.	Mr A. G Pirzada B Ag (Bombay)	Do	do
85	Junior Assistant to Cotton Supervisor, Indus Left Bank.	Mr J D Advani B Ag (Bombay)	Do	do
86	Junior Assistant to Cotton Supervisor, Indus Left Bank	Mr R M Ranji Dip Ag (Bombay)	Ten years under Sind Physiological Scheme	120
87	Junior Assistant to Cotton Supervisor Indus Left Bank	Mr Tharumal K S	On deputation from Sind Department of Agriculture	
88	Junior Assistant to Cotton Supervisor, Indus Left Bank	Mr Naraandas T T	—	
89	Junior Assistant to Cotton Supervisor Indus Left Bank.	Mr S M Khalsa B Ag (Bombay)	—	
90	Junior Assistant to Cotton Supervisor, Indus Left Bank.	Mr Lachmandas M S	—	
CENTRAL PROVINCES RESEARCH SCHEMES				
(i) Botanical Scheme				
91	Economic Botanist for Cotton	*Mr D N Mahita, B A (Oxon) F L S	On deputation from Central Provinces Department of Agriculture	

* Since appointed Secretary of the Committee

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—*contd*

CENTRAL PROVINCES RESEARCH SCHEMES—*contd*

(i) *Botanical Scheme—contd*

92	Assistant to Economic Botanist for Cotton	Mr S G Roy, L Ag, and Post Graduate, Pusa	On deputation from Central Province Department of Agriculture
93	Assistant to Economic Botanist for Cotton	Mr S S Pande, M Sc (Punjab)	Research Student Indian Central Cotton Committee
94	Assistant to Economic Botanist for Cotton	Mr D G Savargaonkar, L Ag (Hons)	On deputation from Central Province Department of Agriculture
95	Assistant to Economic Botanist for Cotton	Mr D L Janams, L Ag (Hons)	Do do
96	Assistant to Economic Botanist for Cotton	Mr D Y Bhand, L Ag (Hons)	Do do
97	Assistant to Economic Botanist for Cotton	Mr V N Paranjpe, B Sc (Allahabad)	—

(ii) *Entomological Scheme*

98	Agricultural Assistant	..	..	Mr M S Patel B Ag	.	.	.	—
99	Agricultural Assistant	..	..	Mr S A Raja Rao	.	.	.	—
COMBINED LONG STAPLE COTTON AND MARKETING OF VERUM COTTON SCHEMES IN C P AND DEKAR.								
100	Agricultural Assistant	..	..	Mr J P Tiwan, B Ag	.	.	.	—
101.	Agricultural Assistant	..	..	Mr L P Khare, B Ag	.	.	.	—
102	Agricultural Assistant	..	..	Mr G N Wadadkar, B Ag	.	.	.	—
103	Agricultural Assistant	..	..	Mr L B Deshpande, B Ag	.	.	.	—
104	Agricultural Assistant	..	..	Mr N B Chuncholkar, B Ag	.	.	.	—
105	Agricultural Assistant	..	..	Mr J N Kelkar, B Ag	.	.	.	—
106	Agricultural Assistant	..	..	Mr G C Tiwan, Certificate Course of Agricultural College, Nagpur	.	.	.	—

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—*contd.*

COMBINED LONG STAPLE COTTON AND MARKETING OF VERUM COTTON SCHEMES IN C P AND BERAR—*contd.*

107.	Agricultural Assistant ..	..	..	Mr M. D. Anadeo, B Ag.	..	..	..	—
108.	Agricultural Assistant ..	..	..	Mr. Rafiat Ali Haqqani, B Ag.	..	..	..	—
109.	Agricultural Assistant ..	..	..	Mr K. S S Chowhan, B Ag. ..	..	..	..	—
110.	Agricultural Assistant ..	..	..	Mr. R S Shuwalkar, B Ag.	..	..	..	—
111.	Agricultural Assistant ..	..	..	Mr. V S Hingankar, B Ag.	..	..	..	—
112.	Agricultural Assistant ..	..	..	Mr T N Puranik, B Ag.	..	..	..	—

MADRAS RESEARCH SCHEMES.

(i) *Herbaceum Scheme*

113.	Gazetted Assistant ..	..	..	Mr R. Balasubramania Ayyar, B A, B Sc. (Ag)	..	B Sc.	On deputation from Madras Department of Agriculture
114.	Junior Assistant ..	..	..	Mr G Seshadri Ayyangar, M A.	..	..	—
115.	Junior Assistant ..	..	..	Mr. V. Ramaewarni Mudaliar, B A.	..	..	—

(ii) *Pemphres and Physiological Scheme*

116.	Bio Chemist ..	..	..	Dr S Kasinatha Ayyar, B A, Ph D (London)	..	Ph D	On deputation from Madras Department of Agriculture
117.	Physiological Botanist ..	..	..	Mr T. R. Narayana Ayyar, B A (Cantab), B Sc (Ag)	..	Do.	do.
118.	Parasitologist ..	..	..	Mr. P. N. Krishna Ayyar, B A.	..	..	do.
119.	Assistant Botanist ..	..	..	Mr K. Dharma Rajulu, M Sc. (Bombay)	..	Research Student, Indian Central Cotton Committee.	
120.	Assistant Entomologist ..	..	..	Mr V. Margabandu, M A.	..	..	On deputation from Madras Department of Agriculture

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—contd

MADRAS RESEARCH SCHEMES—contd

(ii) *Pemphres and Physiological Scheme—contd*

				On deputation from Madras Department of Agriculture	
121.	Assistant Botanist	..	..	Do	do.
122.	Assistant Entomologist	..	..	Do	do.
123.	Assistant Chemist	..	..	Do	do.
124.	Assistant Botanist	..	..	Do	do.
125.	Assistant ..	..	..	Do	do.

(iii) *Breeding of Nadam Cotton.*

125	Assistant	On deputation from Madras Department of Agriculture	
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PUNJAB RESEARCH SCHEMES.

(i) *Botanical Scheme*

126	Cotton Research Botanist	Research Student, Indian Central Cotton Committee, and State Research Scholar On deputation from Punjab Department of Agriculture.	
127.	Assistant to Cotton Research Botanist	..	..	On deputation from Punjab Department of Agriculture	
128.	Extra Assistant Director of Agriculture (Cotton)	..	..	Do	do
129.	Agricultural Assistant	..	..	Do	do.
130.	Agricultural Assistant	..	..	Do	do.
131.	Agricultural Assistant	..	..	Do	do.
132.	Agricultural Assistant	..	..	Do	do
133.	Agricultural Assistant	..	..	Do	do

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—*contd*

PUNJAB RESEARCH SCHEMES—*contd*

(i) *Botanical Schemes—contd*

134	Agricultural Assistant .. ..	..	Ch Kanhai Ram B Sc (Agri) Gold Medalist	—
135	Agricultural Assistant (B Class)	..	Mr S E Daniel L C (Course)	.. On deputation from Punjab Department of Agriculture
136	Agricultural Assistant (B Class)	..	Ch Mohammad Raehid Khan L C (Course), Munshi Fazal, (F A, Punjab University)	Do do
137	Statistical Assistant .. ..	..	Mr Bhagat Ram Sehgal, M A (Punjab)	—
138	Assistant Cotton Entomologist	..	(ii) <i>Entomological (Pink and Spotted Boll worm) Scheme</i> Mr M Haroon Khan, B Sc. (Hons.) (London), A.R.C.S (London)	—
139.	Agricultural Assistant .. ..	..	Mr M Mohd Abdul Gham, B Sc (Agri) ..	—
140	Agricultural Assistant		(iii) <i>Scheme for Clean up Campaign of Spotted Boll worm</i> Pt Ganda Ram, B Sc F E L	—
141	Agricultural Assistant		Mr Ladha Ram, B Sc	—
142	Agricultural Assistant		.. Mr Manzoor Abbas, B Sc (Agri)	—
143	Assistant Cotton Mycologist		(iii) <i>Root Rot Scheme</i> .. Dr R S Vasudeva, B Sc, Ph D (London), D I C (London)	—
144	Agricultural Assistant		.. Mr Mohd Ashraf, B Sc (Agri)	—
145	Agricultural Assistant		.. Ch Mohd Rafiq, M Sc (Hons)	—

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—cont'd

PUNJAB RESEARCH SCHEMES—cont'd

(iv) *Physiological (Periodical Partial Failure) Scheme*

		Prof. R. H. Dastur, M Sc, FLS	On deputation from Bombay Educational Department
146	Plant Physiologist	.. ..	—
147	Assistant Physiologist and Microscopist.	Dr. S. S. Verma, D Sc (Madras), Ph D (London), DIC	—
148	Soil Assistant	.. .. Dr. A. M. Sheikh, M Sc (Bombay), Ph D (London), DIC, AIC	—
149	Bio Chemist	.. .. Dr. K. M. Samant, M Sc, Ph D	—
150	Chemical Assistant	.. .. Mr. A. A. Ahad, B Sc (Agr)	—
151	Physiological Assistant	.. .. Bh. Sucha Singh, B Sc (Agr)	—
152	Research Assistant	.. .. Dr. J. J. Chinnoy, M Sc (Bombay), Ph D (London), DIC	—
153	Field Assistant	.. .. Bh. Mukhtiar Singh, B Sc (Agr)	—
154	Statistical Assistant	.. .. Mr. Kanwar Kishan, M A (Punjab)	—

HYDERABAD RESEARCH SCHEMES

(i) *Botanical Scheme*

155	Cotton Research Botanist	.. .. Rai Sahib Kalidas Sawhney, M Sc. (Punjab)	Late Cotton Breeder in the Department of Agriculture, Iraq Baghdad
156	Assistant Cotton Research Botanist	.. .. Mr. D. V. Narayanayya Dip Agr. (Poona)	On deputation from Bombay Department of Agriculture
157	Assistant Cotton Research Botanist	.. .. Mr. V. K. Bederker, B A (Madras), B.Ag. (Bombay)	On deputation from H. E. H. the Nizam's Department of Agriculture
158	Inspector, Variety Testing Stations	.. .. Mr. N. R. Yardi, B Ag (Bombay)	.. ..

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—*contd.*

HYDERABAD RESEARCH SCHEMES—*contd.*

(ii) *Hyderabad (Pink and Spotted Boll worm) Scheme*

159.	Cotton Entomologist	..	..	..	Mr. H. D. Nangpal, M Sc (Hons) (Punjab)	Research Student, Indian Central Cotton Committee and Assistant Entomologist, United Provinces	—
160.	Senior Research Assistant	..	..	..	Mr. N. T. Nadkarny, B Ag (Bombay), Post Graduate Course in Entomology at Poona Agricultural College.	Pink Boll-worm Scheme.	—
161.	Junior Research Assistant	Mr. T. E. Krishnaswamy, B Sc (Agn) (Coimbatore).		—

HYDERABAD SEED DISTRIBUTION SCHEME.

162.	Inspector	Mr. M. V. Chitnis	—
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BARODA RESEARCH SCHEMES.

(i) *Root Rot Scheme*

163.	Breeding Assistant	Mr. A. F. Patel, B Ag (Bombay)	—
164.	Mycological Assistant	..	..	..	Mr. G. H. Desai, B Ag. (Bombay)	..	..	..	—

(ii) *Plant Puller Propaganda Scheme.*

165.	Plant Puller Officer, Baroda District	..	..	..	Mr. K. M. Desai, B Ag.	..	..	..	—
166.	Plant Puller Propagandist, Navsari District.	..	..	..	Mr. R. S. Patel	..	..	..	—

LIST OF SCIENTIFIC AND TECHNICAL OFFICERS PAID FROM THE INDIAN CENTRAL COTTON COMMITTEE'S FUNDS AS ON AUGUST 31st, 1937—*concl'd*

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BIKANER BENGALS COTTON IMPROVEMENT SCHEME.

167. Cotton Assistant Mr. Arjan Singh, B.Sc. —

BENGAL COMILLA COTTON SCHEME.

168. Cotton Research Officer Mr. Maya Prakesh Singh, M.Sc. (Lucknow). —

MYSORE (DODDAHATHI) SCHEME.

169 Junior Assistant Botanist Mr. K. Gopala Iyengar, M.Sc. (Bombay) .. —

170. Field Assistant Mr. G. Srinivasa Iyengar, M.Sc. (Mysore) .. —

TECHNOLOGICAL ASSISTANTS PAID BY INDIAN CENTRAL COTTON COMMITTEE.

171. Under Cotton Specialist, Coimbatore Mr. R. L. N. Iyengar, M.Sc. Research Student, Indian Central Cotton Committee.

172. Under Deputy Director of Agriculture, S. D., Dharwar. Mr. H. R. Nayak, Inter Science (Madras) .. Formerly Junior Tester at Technological Laboratory, Bombay.

173. Under Deputy Director of Agriculture, Gujerat, Surat. Mr. Srinagabhushana, B.Sc. (Mysore) .. Research Student, Indian Central Cotton Committee.

174. Under Cotton Research Botanist, Lyallpur. Mr. S. Raja Raman, B.A. (Madras), M.Sc. (Benares), A. Inst. P. (London). —

175. Under Botanist, Agricultural Research Station, Sakrand. Mr. K. S. Marar, B.A. (Madras), LL.B. (Bom.) Formerly Junior Tester at Technological Laboratory, Bombay.

176 Under Cotton Research Botanist, Hyderabad—Deccan. Mr. K. G. Deo, Inter Arts. Do. do.

APPENDIX XV. RESEARCH STUDENTSHIPS

128

Year of appointment	Name	Where posted on appointment	Branch of Cotton Research in which scholarship granted	How now employed	REMARKS
1923	Sohan Singh Bindra, M Sc Honours School (Punjab)	Lyallpur	Cotton Entomology	---	Late Assistant Entomologist, Pink Boll worm Research Scheme, Punjab Recently in Agricultural Department, Kenya
"	Mohammad Afzal, B Sc (Punjab)	Do	Cotton Botany (Plant Breeding)	Punjab Agricultural Department Cotton Research Botanist Punjab Botanical Research Scheme Assistant to Economic Botanist for Cotton, Central Provinces Botanical Research Scheme	Indian Central Cotton Committee
"	Shao Shankar Pande, M Sc (Punjab)	Nagpur	Do	Reader in Botany, Khalsa College Amritsar	Do
"	Jivan Singh, M Sc (Punjab)	Do	Cotton Mycology	Late Senior Mycological Assistant, Central Provinces Wilt Investigation Scheme	
"	Habanto Banerji, M Sc (Calcutta)	Combastore	Cotton Botany	University Lecturer in Botany, Calcutta University, from 31st January 1929	Held a Senior Research Studentship under Dr M A Sampathkumaran, M A, Ph D, Central College, Bangalore, and at the Institute of Plant Industry, Indore, from April 1926 to March 1928

Year of appointment	Name	Where posted on appointment	Branch of Cotton Research in which scholarship granted	How now employed	Remarks
1923	B B Desai, B Ag (Bombay)	Dharwar	Cotton Botany	Sind Agricultural Department Cotton Breeder Sini Murpurkhas	Held a Senior Research Studentship at the Institute of Plant Industry Indore, from July 1926 to June 1927
1924	Atul Chandra Dutta M Sc (Calcutta)	M Sc Combarore	Do	Lecturer in Botany Cotton College Gauhati, Assam	
"	N Hari Rao M Sc (Calcutta)	Technological Research Laboratory, Matunga, Bombay	Textile Physics	Senior Research Assistant (Physicist), Technological Research Laboratory, Matunga Bombay	Indian Central Cotton Committee
"	H D Nangapal, M Sc, Honours School (Punjab)	Cawnpore	Cotton Entomology	Entomologist, Hyderabad Pink and Spotted Bell worm Scheme, Parbhani	Late Special Research Assistant, Pink Bell worm Investigation, United Provinces
"	Sant Bahadur Singh, M Sc (Benares Hindu University)	Surat	Cotton Physiology		Resigned in August 1924 to go to Cambridge for further study Obtained Ph D
1925	Vishwa Ram Singh, L Ag (Agricultural College, Cawnpore)	Cawnpore	Cotton Entomology	United Provinces Subordinate Agricultural Service	Late Research Assistant under the Entomologist to Government, United Provinces—Pink Bell worm Investigation Scheme
"	Akber Ali, B Sc (Punjab)	Lyallpur	Cotton Botany (Plant Breeding)	Punjab Agricultural Department, Agricultural Assistant, Punjab Botanical Research Scheme	Indian Central Cotton Committee

RESEARCH STUDENTSHIPS—contd

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Year of appointment	Name	Where posted on appointment	Branch of Cotton Research in which scholarship granted	How now employed	REMARKS
1923	Kedar Nath Trehan, M Sc (Punjab)	Lyallpur	Cotton Entomology	Punjab Agricultural Department, Assistant Cotton Entomologist, White Fly Investigation Scheme, Punjab	Held Senior Research Studentship for study of 'White Fly' problem at Khansawal Indian Central Cotton Committee
"	S E Kumana, B A., M Sc (Bombay)	Technological Research Laboratory, Matunga Bombay	Cotton Technology		Technological Assistant, Dharwar, up to 31st July 1929. Went abroad for further study
"	J D Ranadive, B Ag (Bombay)	Dharwar	Cotton Mycology	Pathological Assistant Cotton Breeding Scheme Jalgaon, Khandesh	Indian Central Cotton Committee
"	P K Roy, M Sc (Dacca)	Technological Research Laboratory, Matunga Bombay	Textile Physics		Resigned in July 1925
"	K R Sen, M Sc (Dacca)	Do	Do	Technological Assistant, Lyallpur	Indian Central Cotton Committee Obtained a Doctorate (D Sc) in 1934
"	L N Rao, M Sc (Calcutta)	Do	Cotton Microscopy	Lecturer in Botany, Central College, Bangalore	Resigned in August 1926
1926	D F Kapadia, B A (Bombay), M Sc (Tech), (Manchester)	Do	Cotton Technology	Head of the Textile Manufactures Department Victoria Jubilee Technical Institute, Bombay	Late Senior Research Assistant, Assistant Technologist, Technological Research Laboratory, Matunga, Bombay

RESEARCH STUDENTSHIPS—*contd.*

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Year of appointment	Name	Where posted on appointment	Branch of Cotton Research in which scholarship granted	How now employed	Remarks
1926	Ram Saran Koהל, M Sc (Punjab)	Technological Research Laboratory Matunga Bombay	Textile Physics	Senior Research Assistant (Physicist) Technological Research Laboratory, Matunga, Bombay	Indian Central Cotton Committee
"	M A Sharma Pyengar, B Ag (Bombay)	Surat	Cotton Physiology	Sind Agricultural Department, Senior Assistant to Agricultural Chemist, and Soil Physicist, Sakrand	Awarded a nd Training Grant for foreign study in 1933
"	Karam Singh Lamba, B Sc Honours School (Punjab)	Lyalpur	Cotton Entomology	Chemist and Agronomist, Institute of Plant Industry, Indore	Resigned in July 1927
"	Y D Wed, M A, M Sc (Bombay), A.I.I.Sc	Coimbatore	Cotton Bio chemistry	Sind Agricultural Department, Cotton Supervisor, Indus Right Bank, Sind Seed Distribution Scheme, Dadu	Do
"	H A Idnani, B Ag (Bombay)	Institute of Plant Industry, Indore	Cotton Botany	Assistant Farm Superintendent, Institute of Plant Industry, Indore	Do
"	S C Talewara, B Ag (Bombay)	Do	Do	Technological Assistant, Coimbatore	Do
1927	R Lakshminarasimha Iyengar, M Sc	Technological Research Laboratory, Matunga, Bombay.	Cotton Technology	Assistant Chemist, Indian Lac Research Association	..
"	Anant Krishna Thakur, M Sc (Bombay)	Institute of Plant Industry, Indore	Cotton Bio chemistry	..	Secured Government Scholarship for study abroad and obtained Ph D (Cantab)
"	Dev Raj Mehta, B Sc, Honours School (Punjab)	Lyalpur ..	Cotton Entomology	..	..

RESEARCH STUDENTSHIPS—*contd*

132

Year of appointment	Name	Where posted on appointment	Branch of Cotton Research in which scholarship granted	How now employed	REMARKS
1927	Uma Shankar, M Sc (Allahabad)	Cawnpore	Cotton Entomology	Assistant Professor of Zoology and Entomology, Agricultural College Cawnpore	Obtained Doctorate at Edinburgh
"	Shripad Shamrao Rane, M Sc (Benares Hindu University)	Institute of Plant Industry, Indore	Cotton Physiology	Unemployed	Awarded a Foreign Scholarship by the Indian Central Cotton Committee Obtained Ph D (Lond)
"	Sant Singh Verma, M Sc (Benares Hindu University)	Dharwar	Cotton Physiology in connection with Cotton Wilt Investigation		
"	Lakshmi Narayan Mathur M Sc, (Punjab)	Institute of Plant Industry, Indore	Cotton Breeding	Crop Botanist Ujjain Gwalior Department of Agriculture	
"	Kadaba Rangaswamy, M Sc (Calcutta)	Coimbatore	Do	Unemployed	
"	S Shamsher Singh, M Sc (Punjab)	Institute of Plant Industry, Indore	Cotton Agronomy	Agricultural Officer, Bikaner State	Indian Central Cotton Committee
1928	K Dharmarajulu, M Sc (Bombay)	Dharwar	Cotton Mycology	Assistant Botanist Madras Pempheres and Physiological Scheme	
"	Pare Mohan B Sc, Honours School (Punjab), M Sc	Cawnpore	Cotton Entomology	Field Assistant, Parasite Work Pink and Spotted Boll worm Scheme Punjab	
"	R N Gudwani B Ag (Bombay)	Surat	Cotton Agronomy	Sind Agricultural Department, Inspector of Agriculture Eastern Nara Circle Mirpurkhas	
"	M Kanti Raj, M A, B Sc (Agr.) (University of Edn)	Institute of Plant Industry, Indore	Do	Madras Agricultural Service	Indian Central Cotton Committee
"	O Nanundhyaya M Sc (Calcutta)	Technological Research Laboratory, Matunga Bombay	Cotton Technology	Junior Research Assistant Technological Research Laboratory, Matunga Bombay	

RESEARCH STUDENTSHIPS—*contd*

133

Year of appointment	Name	Where posted on appointment	Branch of Cotton Research in which scholarship granted	How now employed	Remarks
1929	Srangabhushana B Sc	Technological Research Laboratory, Matunga Bombay	Cotton Technology	Technological Assistant Surat	Indian Central Cotton Committee
3	Bhai Pratap Singh Bhullar B Sc (Agri) (Punjab)	Lyalpur	Cotton Marketing and Economics	Punjab Agricultural Department	
"	Bhai Ajalb Singh Gular B Sc (Agri) (Punjab)	Do	Do	Do	
1930	Madan Lal Bhatia M Sc (Punjab)	Do	Entomology	Abroad for further study	
"	Bhola Nath M Sc (Punjab)	Institute of Plant Industry, Indore	Cytology and Plant Breeding	Genetical Assistant Institute of Plant Industry Indore	Indian Central Cotton Committee
4	Pran Nath Mehra M Sc (Punjab)	Sakrand	Do		Resigned
"	Brajendra Nath Bhargava M A (Lucknow)	Lucknow	Cotton Marketing and Economics		
1931	B S Shrivastava, B Ag (Bombay)	Surat, Gujarat	Do		Resigned
4	K. H. Dube B Ag (Nagpur)	Nagpur	Do	District Supervisor Enquiry into the cost of production of Cotton and Sugar-cane crops Central Provinces	
"	Santokh Singh Jaggi B Sc (Agri) (Punjab)	Lyalpur	Do	Agricultural Assistant Punjab Botanical Research Scheme Madras Agricultural Services	Indian Central Cotton Committee
"	Doraiswami Ayyar, B A Madras B Sc (Agri) (Madras)	Madras	Do		
1935	Krishna Behari Lal M Sc (Cal) 1 h D (Edinburgh)	Lyalpur	Cotton Entomology	Second Assistant Entomologist at the Imperial Agricultural Research Institute, New Delhi	Under training
2	M. U. Parmar, M Sc (Bombay)	Technological Research Laboratory Matunga Bombay	Cotton Technology	Research Student	
"	O Rama Rao, B Sc (Bombay)	Do	Do	Do	Do

RESEARCH STUDENTSHIPS—*contd*

132

Year of appointment	Name	Where posted on appointment	Branch of Cotton Research in which scholarship granted	How now employed	REMARKS
1927	Uma Shankar, M Sc (Allahabad)	Cawnpore	Cotton Entomology	Assistant Professor of Zoology and Entomology, Agricultural College Cawnpore	Obtained Doctorate at Edinburgh
"	Shripad Shamrao Rane, M Sc (Benares Hindu University)	Institute of Plant Industry, Indore	Cotton Physiology	Unemployed	Awarded a Foreign Scholarship by the Indian Central Cotton Committee Obtained Ph D (Lond)
"	Sant Singh Verma, M Sc (Benares Hindu University)	Dharwar	Cotton Physiology in connection with Cotton Wilt Investigation		
"	Lakshmi Narayan Mathur M Sc, (Punjab)	Institute of Plant Industry, Indore	Cotton Breeding	Crop Botanist Ujjain, Gwalior Department of Agriculture Unemployed	
"	Kadaba Rangaswamy, M Sc (Calcutta)	Combatore	Do		
"	S Shamser Singh, M Sc (Punjab)	Institute of Plant Industry, Indore	Cotton Agronomy	Agricultural Officer, Bikaner State	Indian Central Cotton Committee
1928	K Dharmarajulu, M Sc (Bombay)	Dharwar	Cotton Mycology	Assistant Botanist, Madras Pemphears and Physiological Scheme	
"	Pare Mohan, B Sc, Honours School (Punjab) M Sc	Cawnpore	Cotton Entomology	Field Assistant, Parasite Work, Pink and Spotted Boll worm Scheme Punjab	
"	R. N Gidwani B.Ag (Bombay)	Surat	Cotton Agronomy	Sund Agricultural Department, Inspector of Agriculture, Eastern Naracircle, Murpurkhas	
"	M Kanti Raj, M A, B Sc (Agr.) (University of Edin)	Institute of Plant Industry, Indore	Do	Madras Agricultural Service	Indian Central Cotton Committee
"	O Nanjundayya M Sc (Calcutta)	Technological Research Laboratory, Matunga Bombay	Cotton Technology	Junior Research Assistant Technological Research Laboratory, Matunga Bombay	

RESEARCH STUDENTSHIPS—contd

Year of appointment	Name	Where posted on appointment	Branch of Cotton Research in which scholarship granted	How now employed	REMARKS
1929	Srangabhusana B Sc	Technological Research Laboratory Matunga Bombay	Cotton Technology	Technological Assistant Surat	Indian Central Cotton Committee
.	Bhai Pratap Singh Bhullar B Sc (Agr) (Punjab)	Lyallpur	Cotton Marketing and Economics	Punjab Agricultural Department Do	
.	Bhai Ajit Singh Galzar B Sc (Agr) (Punjab)	Do	Do	Do	
1930	Maden Lal Bhatia M Sc (Punjab)	Do	Entomology	Abroad for further study	
.	Dhola Nath M Sc (Punjab)	Institute of Plant Industry Indore	Cytology and Plant Breeding	Genetical Assistant, Institute of Plant Industry Indore	Indian Central Cotton Committee
.	Puran Nath Mehra M Sc (Punjab)	Sakraud	Do		Resigned
.	Brayendra Nath Bhargava Lucknow M A (Lucknow)	Lucknow	Cotton Marketing and Economics		
1931	B S Sheshgiri, B Ag (Bombay)	Surat Gujarat	Do		Resigned
.	K. R. Dube B Ag (Nagpur)	Nagpur	Do	District Supervisor Inquiry into the cost of production of Cotton and Sugar-cane crops Central Provinces	
"	Santokh Singh Jaggi, B Sc (Agr) (Punjab)	Lyallpur	Do	Agricultural Assistant Punjab Botanical Research Scheme	Indian Central Cotton Committee
.	Doraiswami Ayyar, B A B Sc (Agr) (Madras)	Madras	Do	Madras Agricultural Service	
1935	Krishna Behari Lal M Sc (Cal), Ph D (Edinburgh)	Lyallpur	Cotton Entomology	Second Assistant Entomologist at the Imperial Agricultural Research Institute New Delhi	Under training
1936	M U Farmer, M Sc. (Bombay)	Technological Research Laboratory Matunga Bombay	Cotton Technology	Research Student	
.	G Rama Rao, B Sc (Bombay)	Do	Do	Do	Do

RESEARCH STUDENTSHIPS—continued

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Year of appointment	Name	Where posted on appointment	Branch of Cotton Research in which scholarship granted	How now employed	REMARKS
1931	Sant Singh Verma (Benares Hindu University)	Imperial College of Science and Technology, London	Foreign Research Studentship, Imperial College of Science and Technology, London	Completed training July 1935 Obtained Ph D of London University	
1933	S N Venkataramanan, B A. B.Sc (Agri) (Madras)	Calcutta	Training Grants Cotton Statistics	Madras Agricultural Service	
1936	O Jagannatha Rao, B A (Madras)		Cotton Physiology	Research Student	Under training
1936	P Abraham B A. (Madras)		Cotton Cytology	Not yet joined	
1933	M Taskhir Ahmad B Sc (Agri) (Punjab)	Trinity College, Entomology Cambridge	Foreign Training Grants	Assistant Entomologist Imperial Institute of Agricultural Research Pune	
"	G B Patel, B Ag (Bombay)	University of California, U S A.	Cotton Breeding	Research Student	Completed training, July 1936 Obtained M.Sc. of California University
1934	M A. Shama Iyengar, B Ag (Bombay)	Tour in Hungary England and Egypt	Study of Kalar (all lands and cultivation of superior Egyptian cottons with special reference to soil and environmental conditions.	Assistant Senior Assistant to Agricultural Chemist and Soil Physicist	
"	Nazir Ahmad, M Sc (Punjab)	Imperial College of Science and Technology, London	Entomology		Obtained Diploma of Imperial College of Science & Technology, London
1936	Kidar Nath Trehan, M Sc. (Punjab)	Rothenhamsted Expt Station	Applied Entomology	Research Student	Under training

"Indian Central Cotton Committee" in the remarks column indicates a post paid for from one of the Committee's Research Grants.

